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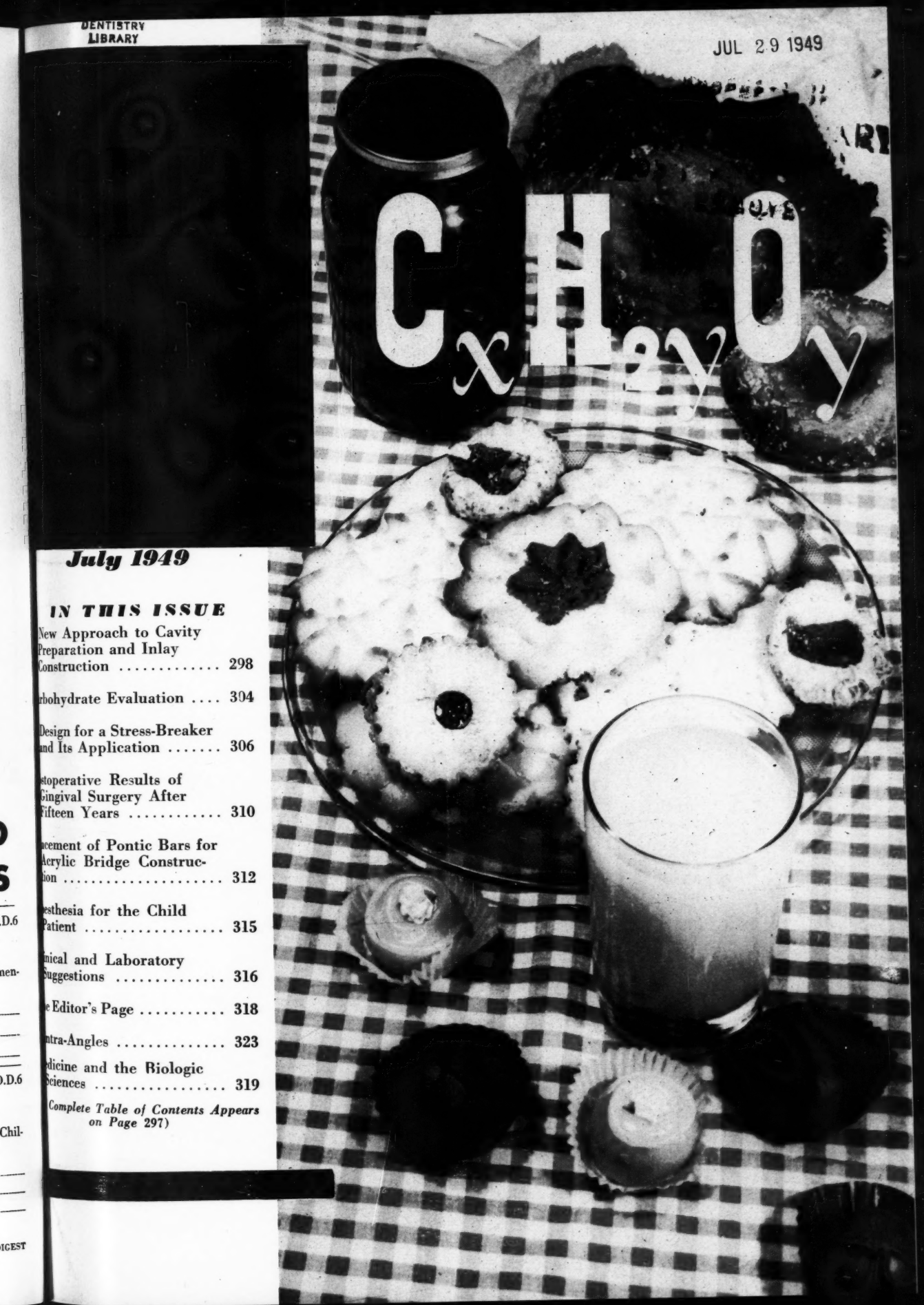

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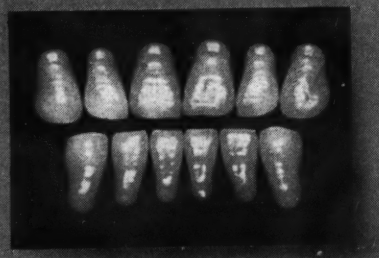

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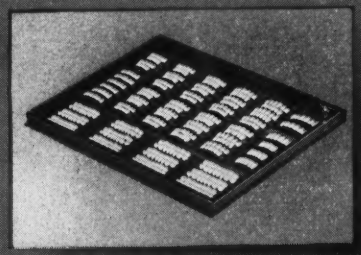

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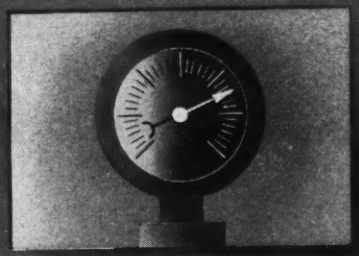

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Vol. 55, No. 7

Dental Digest

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About Our CONTRIBUTORS

B. Placek, D.D.S. (Northwestern University, Dental School, 1915) is engaged in general practice of dentistry and has been for twenty-five years a lecturer and student of dental economics. In his article in the current issue of Digest, A New Approach To Cavity Preparation And Inlay Construction, Doctor Placek describes in detail a new technique, devised and used by himself, which he has taught to many other dentists and used as a subject for demonstration clinics and lectures. Step-by-step directions are given for producing a gold inlay by this new method.

Alfred J. Drew, D.D.S. (Northwestern University, Dental School, 1915) is a member of the American Dental Association and the International College of Dentists. Doctor Drew has done considerable research in periodontia. With his article in this month's issue, A Design for a Stress-Breaker and Its Application, he makes his first appearance in Dental Digest.

Edward L. Ball, D.D.S. (Ohio College of Dental Surgery, 1919) published an analysis of a case of hyperplasia fifteen years ago. In the current issue of Dental Digest he describes the status of the same case at the present time.

Jack F. Cathcart, D.D.S. (University of California, College of Dentistry, 1926) is a regular contributor to Dental Digest on various aspects of his specialty, crown and bridge prosthetics. Doctor Cathcart's article in this month's issue, Placement Of Pontic Bars For Acrylic Bridge Construction, gives a step-by-step procedure for the proper technique in the use of acrylic in bridge construction.

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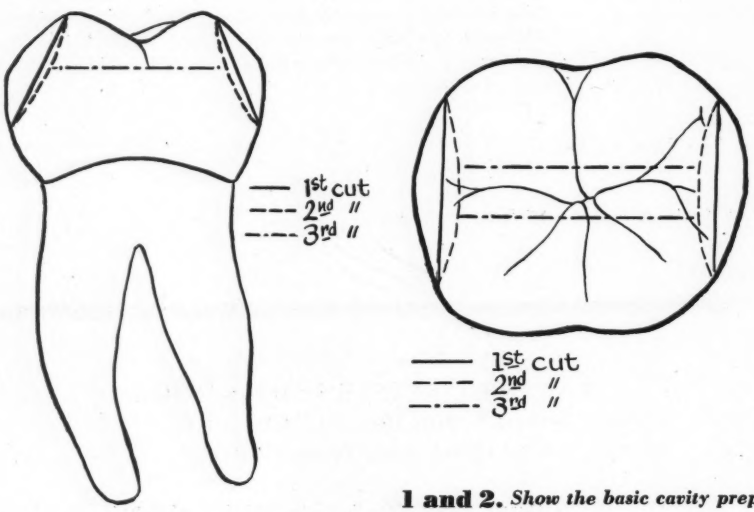
A New Approach to CAVITY PREPARATION *and* INLAY CONSTRUCTION

B. PLACEK, D.D.S., Chicago

DIGEST

It is well known that dental techniques and methods are constantly changing and that today's methods will be quickly outmoded by progress. Certain fundamental principles, however, remain the same under all circumstances. Biologic, physiologic, mechanical, and economic principles cannot be violated. The technique described in this article, a combination of the modified slice type preparation and the indirect impression technique with added improvements devised by the author, is advocated because basic laws of good procedure are not infringed upon. The method is not in the experimental stage. It has been applied by the author for twenty years with benefit to thousands of patients. A large number of dentists have adopted the method.

Restorations constructed according to the technique described herein have proved satisfactory to patients highly susceptible to caries and to those more or less free from caries, to patients who observed the rules of good oral hygiene and to those who disregarded hygienic rules. The author's purpose has been to avoid the usual pitfalls encountered in constructing a superior inlay and to develop a technique that would be rapid, painless, esthetic, and economical. Step-by-step directions for producing this precision-standard gold inlay are given.



1 and 2. *Show the basic cavity preparation outlines.*

Requirements of a Gold Inlay

To be acceptable a gold inlay must have the following qualifications:

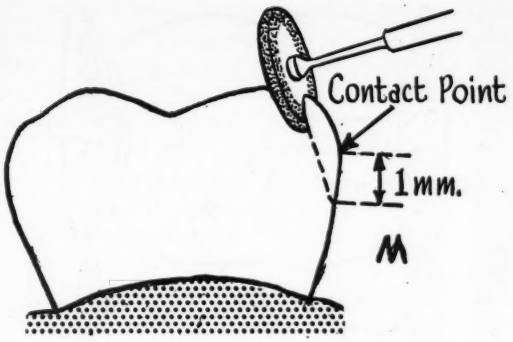
1. It must be a restoration that does not destroy unnecessary tooth structure.
2. It must have perfect margins that extend to so-called immune areas.
3. The inlay must have proper contour.
4. Occlusal markings must be anatomically correct.
5. The restoration must be able to withstand normal stresses of mastication and leave the tooth comfortable.
6. The method of constructing the inlay must be rapid, painless, simple, systematized, and at a cost within the reach of all.
7. It must restore the tooth to normal form and function.

Indications

1. All two and three-surface cavities can be replaced regardless of the extent of caries.
2. Old badly margined amalgam restorations can be replaced.
3. MOD's are indicated where rampant caries is present as the tooth destruction is so small that the time consumed is only slightly increased and the end results are eminently more satisfactory.

Disadvantages Eliminated by this Technique

1. The weakest point of conventional inlays, the square gingival butt joint, is eliminated. Recurrent caries occurs here most often.
2. Jamming of separating disc while making a slice is prevented.
3. Scratching or marring of contacting tooth which occurs in using



3. ***The straight periphery-cutting diamond disc making mesial cut. Procedure One.***

the bur technique does not occur.

4. Buccal, lingual, and gingival margins are all produced in one cut.

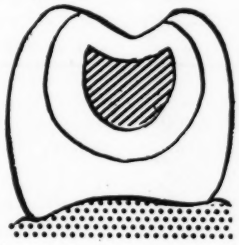
Advantages of this Technique

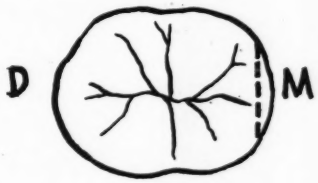
1. Impression wax slides over the preparation instead of into it.
2. A broad enamel margin is obtained instead of a hairline box margin.
3. Easier access is gained.
4. Proper extension of buccal and lingual margins is accomplished.
5. Simplification by the elimination of many extra steps as a means of preventing errors.

Steps that may be Eliminated—The use of a wax impression material reduces the anxiety of over-expansion or contraction. The following steps are also omitted: (1) copper plating, (2) amalgam die, (3) removing of pattern from die, (4) refitting of wax pattern into tooth to check fit, and (5) complicated manner of checking articulation.

Impression Material—To be ideal, impression material should have the following qualities:

1. Ease of manipulation.
2. The ability to give a sharp, undistorted reproduction of the preparation which will remain undistorted for a considerable length of time.
3. The material must be able to expand and contract.
4. Removal of the material from the model must be possible without injuring the die.





4. ***Shows the mesial surface after the first cut. Procedure One.***

Method

The method is a combination of the modified slice type preparation (Figs. 1 and 2) and the indirect impression technique. Several improvements devised by the author have been added. These include the following:

1. Complete diamond stone instrumentation.
2. The use of the water spray.

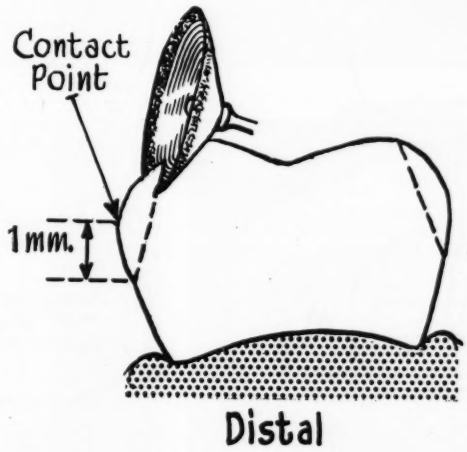
Instruments Required—The following seven items are needed to carry out the technique:

1. Diamond stones.
2. Water and air spray.
3. Impression material.
4. Copper bands.
5. Investment material.
6. Gold.
7. Cement.

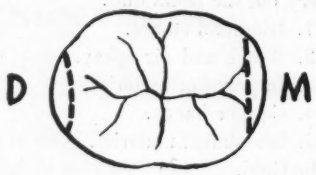
Procedure One

Cavity Preparation—Periphery-cutting diamond discs are used. The mesial surface is cut with *straight* discs starting about ½ to ¾ millimeter from the contact point on the occlusal surface at an inclination that will bring the disc out gingivally approximately 1 millimeter below the contact point (Figs. 3 and 4). The distal surface is cut with a *curved* periphery-cutting disc (Figs. 5 and 6).

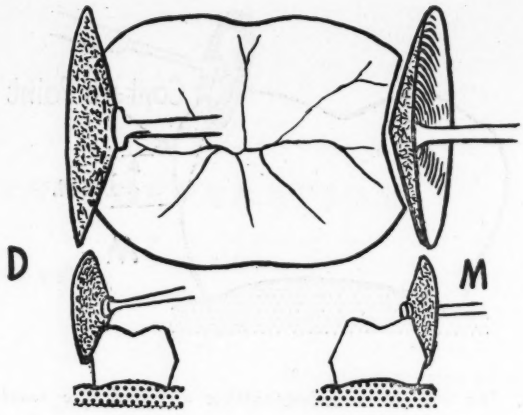
Periphery-cutting Discs—These discs or saws embody diamonds (or cutting teeth) which are wider than the body of the so-called circular saw



5. ***The curved cup-shaped periphery-cutting disc making the distal cut. Procedure One.***



6. ***Shows the distal surface after the use of the cup-shaped periphery-cutting diamond disc. Procedure One.***



7. ***A wedge-shaped section is cut out on the mesial and distal surfaces, using cup-shaped diamond discs. Procedure Two.***

so that particles from the cut tooth have clearance to escape and are washed away.

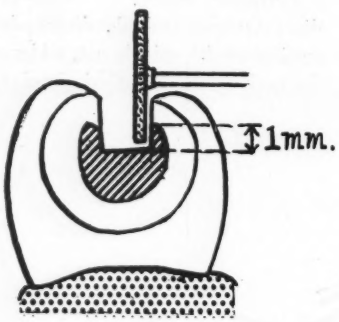
Buccal and Lingual Outlines—The changes made in this procedure are as follows: 1. *Cut through* the tooth instead of shaving off as is usually done (Figs. 3 and 5).

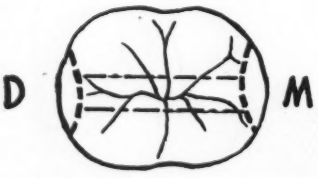
2. The gingival outline created is *curved* instead of square. This innovation takes 90 per cent of the failures out of inlay construction.

3. Because this is a mechanical procedure it takes (1) less effort and digital skill, and (2) provides a smooth, precise finishing line.

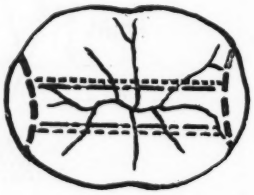
4. The shape and character of the gingival outline described has demonstrated over a period of many years that recurrence of caries is virtually nonexistent.

5. The principle underlying the change in technique is that of "from the weak to the strong:" namely, from a box step type to the curved shape.





8. ***The opening of the occlusal surface with a large wheel type diamond stone. Procedure Three.***



9. ***A short tapered diamond stone is used to taper the cavity walls. Procedure Four.***

Procedure Two

A wedge-type section is cut out (Fig. 7) on the mesial and distal surfaces with *conical, cup-shaped* discs. By this procedure the discs cut *away* from the tooth rather than into it.

Passive Retention—These conical

10. ***A cone-shaped diamond stone is used to create a cavo-surface bevel to produce a valvular seat at the occlusal margins. Procedure Five.***

discs follow Procedure One to create a cup-shaped surface from buccal to lingual margins and to provide passive retention as semi-curved surfaces do not slide on each other as easily as flat surfaces do.

Use of Discs—The discs should be applied with the greatest engine speed and the lightest pressure to insure an absolutely smooth surface free from diamond scratches.

Advantages—These outlines are the width of the enamel of the particular area through which they are cut. It is obvious that a margin ¼ millimeter to ½ millimeter is easier to create and work to than a margin 1/20 millimeter which is literally about what a box preparation margin measures.

Procedure Three

The purpose of Procedure Three is to open the intracoronal or occlusal surface area. It should be accomplished by the largest wheel type stone to fit the tooth. Larger instruments cut much faster and create a smoother outline. This cut should extend 1 millimeter below the dento-enamel junction at the depth of fissures or pits of the occlusal surface (Fig. 8).

Procedure Four

A short, tapered cylinder diamond stone is used to accomplish this procedure (Fig. 9). Again, the largest stone to fit the tooth is used. This cut will change the angles of the walls of this part of the preparation to a slight taper of about 10 per cent to 15 per cent. This taper is utilized as a means of retention by the principle of expandable frictional retention. (Forcing a larger body into a smaller hole and utilizing the expandability of the dentine.)

A small portion of the pulpal surface of the finished inlay is ground away to aid in achieving the wedge effect in the fit. This must be done just before the inlay is cemented.

Procedure Five

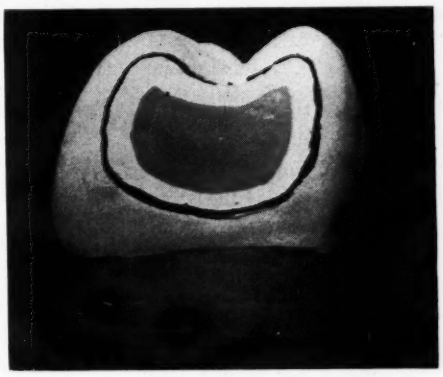
The purpose of this procedure is to create a very slight bevel or valvular seat of the cavo-surface angle on the occlusal (Fig. 10). Either the same instrument used in Procedure Four or a so-called cone type may be used. This completes the basic pattern.

Additional Steps—If caries is still present a few additional steps must be carried out: 1. Remove all caries and if undermined enamel exists carry the outline into areas that will include the undermined enamel.

2. Fill in all undercuts with cement and recut to the basic pattern.

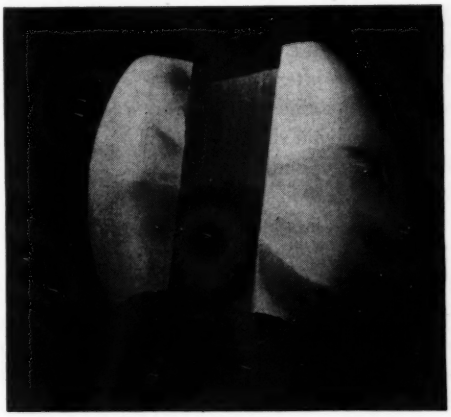
3. If caries extends gingivally do not carry outlines as a whole to include this but proceed as follows: After the basic pattern is formed, use a large cone-type stone in the contra-angle and cut gingivally until the gingival outline is free from caries (Fig. 18). This will provide a basic inlay with an extension.

Remarks—This is a great tooth-saver and timesaver. Cavities that appear extensive become simple and some teeth that ordinarily would be extracted are retained.

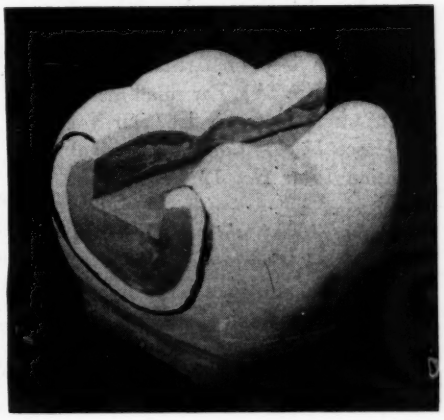


11. ***Proximal view showing the marginal area. Procedure One.***

12. ***Occlusal view showing the mesial cut on the left and the distal cut on the right. Procedure One.***

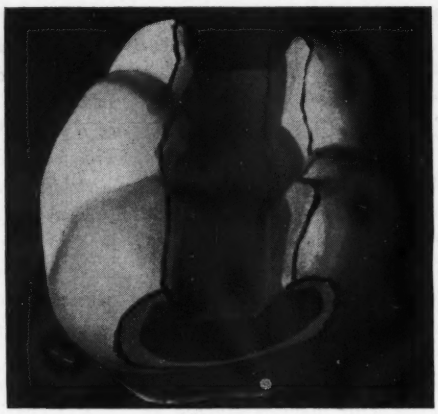


13. ***Occlusal view showing the concavity of the mesial and distal surfaces and the form of the occlusal cut. Procedures Two and Three.***



14. ***Proximo-occlusal view showing the cuts made in procedures Two and Three.***

15. ***Occlusal view showing the tapering of the cavity walls. Procedure Four.***



16. ***Proximo-occlusal view showing the tapering of the cavity walls. Procedure Four.***

17. ***Proximo-occlusal view showing the finished preparation with the cavo-surface bevel. Procedure Five.***

18. ***Shows the gingival extension of the basic outline to include caries at the gingival area.***

Numbers of Diamond Instruments—The following are the numbers of the diamond instruments used:

Procedure 1—Periphery-cutting discs (Star No. 80-82 Densco No. K.L. 25).

Procedure 2—Cup-shaped discs (Star No. 92-93 Densco No. 5D).

Procedure 3—Wheels (Star No. 31-35 Densco No. 5J and 2J).

Procedure 4—Taper type fissures (Star No. 3-4 Densco No. 2C and 2½C).

Procedure 5— Cones (Star No. 21 -12 Densco No. 4A). For small bicuspids or where contact is flat (Star No. 20 Densco 1½A). Cone for gingival extension (Star No. 12 Densco No. 5A).

Advantages of this Preparation Technique—1. Composed entirely of straight schematic lines with an unbroken curved gingival outline, the completed preparation is a mechanical procedure that cannot create any undercuts.

2. The pattern is therefore easy to make because it is disengaged from all marginal contact immediately.

3. The impression is the type which enables discrepancies to be detected easily.

Suggestions—1. All of the cuts must be done under a water spray with the engine running about 3500 to 6000 revolutions per minute (the faster the better.)

2. All diamond stones and points must be cleaned with a diamond stone cleaning solution after each operation to prevent clogging and to insure that the points remain sharp. Friction and dullness of diamond stones is caused by the filling in of debris between the small diamonds mounted in the instruments.

3. The use of a vegetable oil (any cooking oil or olive oil) as a lubricant in the cavity before taking the impression helps in the removal of the wax impression.

Taking the Impression

This technique is composed of the following series of steps, each one as important as the other:

1. Select a copper band two sizes larger than the tooth.

2. Saturate a large pellet of cotton in adrenaline chloride, 7 per cent trichloracetic acid, or superoxol. Apply pressure and leave in the interproximal space to force the soft tissue out of position.

3. Anneal the copper band by heating to cherry red and plunging into a small bottle of alcohol. Punch two small holes into the copper band at the occlusal so that hawk beak tweezers can be inserted into them to remove the band.

4. Fit the copper band to the gingival contour of soft tissue at the mesial and the distal for MOD's and for a two-surface cut-out at occlusal to prevent having to go through contact of the adjacent tooth. Cut on the buccal and lingual so that the band

is about 1.1 millimeter short of the gingival margin.

5. Place the band on the tooth. Push the band away from the cavity with a blunt beaver tail burnisher. This is to give more bulk of impression material so that the band will not touch the margins of the tooth.

6. Heat Glazo wax impression material slowly over a small flame by sticking an explorer into the wax and passing above flame fifteen or twenty times until the material is soft enough to be put easily into the band.

(Glazo wax contains finely divided particles of pure aluminum. This wax may be heated faster and cooled quicker than ordinary impression waxes. It gives sharp definition and is not easily distorted.)

7. Fill the copper band full of wax and then sear the wax to the band by passing slowly through the flame.

8. Slowly push the wax-filled band over the preparation until the wax flows out at the gingival margins.

9. Trim off excess, and holding in position, chill the wax-filled band thoroughly with cold water.

10. Insert the removing forceps or bent tweezers into the holes in the band and remove impression from the tooth. Try to pull in the direction of the long axis of the tooth.

11. Inspect the impression for margins as all margins should stand out prominently, especially the gingival margin. If not too large, any pulls or undercuts that appear may be corrected with a fine explorer. Otherwise recut the cavity in the section where the defects show.

12. Wash the impression with a detergent solution using a camel's hair brush, followed by a stream of cold water.

13. *Let this impression stand for at least ten minutes or more. Two, three, or four hours will not be too long.*

Preliminary Investing

Put a small amount of Bosworth's all-purpose investment in a small bowl or vacuum mixer and vibrate until virtually all the air is excluded. Now carry out the following procedure:

1. Start to fill the band, using a small amount of investment, and vibrate into the impression. Be careful that *no* air is trapped in the investment. Add little by little until the band is filled.

2. Place the remaining investment in a towel and wring dry. This dry investment is now slowly vibrated into the filled band of investment and a cone-shaped handle is made of it. *It must be vibrated!*

3. Let this model harden for *at least two hours*, over night if possible. Then trim the investment to the sides of the band.

4. Soak this model in water for fifteen or twenty minutes before attempting to separate it.

5. Dry-heat over a small Bunsen flame until the wax is of the softness it was when the impression was taken. Slowly remove the model. If the steps outlined have been carefully executed the result will be a perfect, clean model.

6. *Let this model dry for at least thirty minutes* because the wax to be melted on will not stick to a water-soaked model.

7. After drying, the inlay wax of choice can be flowed into the model. Flow the wax in a little at a time until the cavity is completely filled. When the cavity is filled, flame it for smoothness and also to seal it to the margins.

Completing the Pattern

1. Carve the occlusal, using the remaining angles and planes of the tooth as guides.

2. Cut off the model so that it is small in bulk and insert either a large single sprue or two small sprues.

3. Paint with a detergent. Wash off the detergent and let the model and wax pattern soak for five minutes in water.

4. Invest in Bosworth all-purpose investment using a medium thickness of investment. An asbestos liner must be used. Be sure to soak the liner with water. Fill the ring with investment and then slowly, with a vibrating motion, lower mounted pattern into the ring. Allow this to stand for one to two hours, remove sprue, and put into the oven. Heat slowly to 900° Fahrenheit.

5. About 900° to 1000° is the right temperature at which to cast. Higher temperatures cause the gypsum in the investment to break down and the castings are not as satisfactory. Use a hard gold. Cement the inlay by the method of choice and finish in the usual manner.

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We hope that you will accept this invitation!

CARBOHYDRATE EVALUATION

The approximate refined carbohydrate content of popular foods expressed in amounts equivalent to teaspoonsful of sugar. Compiled from current publications of food values.

(100 grams sugar-20 teaspoons-½ cup-3½ oz.-400 calories)

Candy:	runs from 75% to 85% sugar. Popular candy bars are likely to weigh from 1 oz. to 5 oz. and may contain 5 to 20 tsp. of sugar.			
Hershey bar	61	grams (5c size)	7	tsp. sugar
Chocolate cream	13	grams (35 to 1 lb.)	2	tsp. sugar
Chocolate fudge	30	grams 1½" sq. (15 to lb.)	4	tsp. sugar
Butterscotch	5	grams 1"x1"	1	tsp. sugar
Chocolate mints	22	grams 1 medium (20 to 1 lb.)	3	tsp. sugar
Chewing gum		1c stick	½	tsp. sugar
Lifesaver		1 usual size	⅓	tsp. sugar
Chocolate sauce	30	grams 1 tbsp. thick, hp	4½	tsp. sugar
Marshmallow	7.6	grams 1 aver. (60 to 1 lb.)	1½	tsp. sugar
Jam	20	grams 1 tbsp. level or 1 hp tsp.	3	tsp. sugar
Jelly	20	grams 1 tbsp. level or 1 hp tsp.	2	tsp. sugar
Marmalade	20	grams 1 tbsp. level or 1 hp tsp.	3	tsp. sugar
Syrup, maple	20	grams 1 tbsp. level or 1 hp tsp.	2½	tsp. sugar
Honey	20	grams 1 tbsp. level or 1 hp tsp.	3	tsp. sugar
Angel cake	45	grams 1 pc. (1/12 of large cake)	6	tsp. sugar
Chocolate cake	100	grams 2 layer icing (1/12 cake)	15	tsp. sugar
Sponge cake	50	grams 1/10 of average cake	6	tsp. sugar
Cream puff (iced)	80	grams 1 average custard filled	5	tsp. sugar
Doughnut, plain	40	grams 3" in diameter	4	tsp. sugar
Macaroons	25	grams 1 large or 2 small	3	tsp. sugar
Gingersnaps	6	grams 1 medium	1	tsp. sugar
Molasses cookies	15	grams 3½" in diameter	2	tsp. sugar
Brownies	20	grams 2"x2"x¾"	3	tsp. sugar
Custard, baked		½ cup	4	tsp. sugar
Brown Betty	130	grams ½ cup	9	tsp. sugar
Gelatin		½ cup	4	tsp. sugar
Junket		⅛ quart	3	tsp. sugar
Ice cream		⅛ quart	5	to 6 tsp. sugar
Water ice		⅛ quart	6	to 8 tsp. sugar
Apple Pie		1/6 of med. pie	12	tsp. sugar
Cherry Pie		1/6 of med. pie	14	tsp. sugar
Custard, Cocoanut Pie		1/6 of med. pie	10	tsp. sugar
Raisin Pie		1/6 of med. pie	13	tsp. sugar
Pumpkin Pie		1/6 of med. pie	10	tsp. sugar

*Reprinted by courtesy Hermann Becks, M.D., D.D.S. Reprints are availablefor distribution to patients.

Chocolate, all milk		1 cup, 5 oz. milk	6	tsp. sugar
Cocoa, all milk		1 cup, 5 oz. milk	4	tsp. sugar
Cocomalt, all milk		1 glass, 8 oz. milk	4	tsp. sugar
Eggnog, all milk		1 glass, 8 oz. milk	4½	tsp. sugar
Coca Cola	180	grams 1 bottle, 6 oz.	4⅓	tsp. sugar
Gingerale	180	grams 6 oz. glass	3⅓	tsp. sugar
Peaches, canned in syrup	10	grams 2 halves, 1 tbsp. juice	3½	tsp. sugar
Sweet Cider	180	grams 6 oz. glass	4½	tsp. sugar
Rhubarb, stewed	100	grams ½ cup sweetened	8	tsp. sugar
Apple sauce, no sugar	100	grams ½ cup scant	2	tsp. sugar
Prunes, stewed, sweetened	100	grams 4 to 5 med. 2 tbsp. juice	8	tsp. sugar
Apricots, dried	30	grams 4 to 6 halves	4	tsp. sugar
Prunes, dried	30	grams 3 to 4 med.	4	tsp. sugar
Dates, dried	30	grams 3 to 4 stoned	4½	tsp. sugar
Figs, dried	30	grams 1½ to 2, small	4	tsp. sugar
Raisins	30	grams ¼ cup	4	tsp. sugar
Currants, dried	30	grams 2 tbsp.	4	tsp. sugar
Persimmons, fresh	100	grams ½ cup	7	tsp. sugar
Fruit cocktail	120	grams ½ cup, scant	5	tsp. sugar
Orange juice	100	grams ½ cup, scant	2	tsp. sugar
Pineapple juice, unsweetened	100	grams ½ cup, scant	2 3/5	tsp. sugar
Grapefruit juice, unsweetened	100	grams ½ cup, scant	2 1/5	tsp. sugar
Grape juice, commercial	100	grams ½ cup, scant	3 2/3	tsp. sugar

Appraisal of Various Methods for Caries Control

ROBERT G. KESEL, D.D.S., M.S., EDWARD C. WACH, D.D.S., M.S.,

JOSEPH F. O'DONNELL, and ERNST R. KIRCH, Ph.D., Chicago

Summary

In summarizing what may be used for caries control the following procedures can be recommended without hesitancy:

1. Dietary management with the marked restriction in refined carbohydrate consumption, at least during periodic intervals.

2. The discontinuance of in-between meal eating of fermentable carbohydrates.

3. The more diligent use of the toothbrush immediately after eating.

4. The topical application of 2 per cent sodium fluoride solution to the clean enamel surface.

5. The use of a dentifrice containing a nontoxic substance specific for the reduction of lactobacilli in the oral cavity.

Caution

It should be added that we should not promise too much from these procedures. Too often the patient and even the dentist expect that when this regime is followed conscientiously no more cavities will result. Disappointment is expressed if a year or two later some caries is discovered. It is doubtful if any procedure that requires patient effort will ever be 100 per cent effective. Therefore, we must not claim that our preventive measures will irradicate dental caries. But it is possible to look forward to a reduced incidence of this disease.

From *Oral Surgery, Oral Medicine, and Oral Pathology* **2**:677 (May) 1949.

A Design for a STRESS-BREAKER *and its Application*

ALFRED JAMES DREW, D.D.S., Chicago

DIGEST

The use of stress-breakers in partial denture construction is not new but in the past the designs were either so over-simplified that they failed to be useful or so complicated and expensive that except in rare instances they were prohibitive.

One of the best-known stress-breakers available had so many uncontrolled movements that although the teeth involved in its use did not suffer directly, the supporting structures of the ridges were badly traumatized, making the replacement a failure. Another extended distally from the abutment tooth and had no provision for lateral movement. This type engendered so much leverage on the abutment tooth that in many instances the case would have functioned better if the replacement had been of rigid construction.

Several stress-breakers in use today work perfectly. These are custom built and difficult to construct. Specially trained technicians capable of doing this work are at a premium. In this article a description is given for a simple stress-breaker that will fulfill the necessary requirements and a step-by-step outline for its construction and application.

To BE OF value a stress-breaker must have the following qualifications:

1. It must be small.
2. The design should be simple.
3. It should be inexpensive.
4. It should have universal application.
5. There should be no vertical movement or false lateral movement.
6. Binding in any movement, either when working independently or in conjunction with a stress-breaker on the opposite side of the arch is not admissible. This applies to a unilateral case with a reciprocal joint as well.

A Ball and Socket Joint

The simplest type of design that will fulfill all the requirements is what is commonly known as a ball and socket joint (Fig. 1).

Description—A ball and socket joint consists of two half balls of equal radius, perfectly machined, having a common center drilled through, together with a half ball insert for locking purposes.

Terms—The cup with the flat side will be called the *inner* cup, the one with the rounded side, the *outer* cup. To allow the hinge action to take place, the centering hole in the inner cup is enlarged lengthwise to an elliptical form as illustrated in Figure 2.

Working Parts—1. The three separate parts are assembled by soldering the small projection of the ball insertion to the outer cup.

2. The lower portion of the ball insertion is filed so that at the extreme of the hinge action this surface will be parallel with the shank.

Lateral Movement—With this assembly there will be (1) no vertical movement and (2) no false lateral movement as the common center together with the machined cups and half ball insertion prevent it. There will be lateral movement in any degree of the hinge action. This lateral movement can and should be controlled.

Danger of Traumatization—1. Vertical movement would traumatize the tissue just distal to the abutment tooth.

2. False lateral movement would not only injure these same tissues but would also present the problem of peripheral border impingement of the tissueborne saddles.

(False lateral movement includes any movement that would allow the tissue-bearing saddles to shift laterally as a unit as contrasted to a controlled arc movement.)

Principles of Application

Unless certain basic principles are followed in detail no stress-breaker will operate satisfactorily. Using an upper unilateral replacement as an example, these principles are outlined as follows:

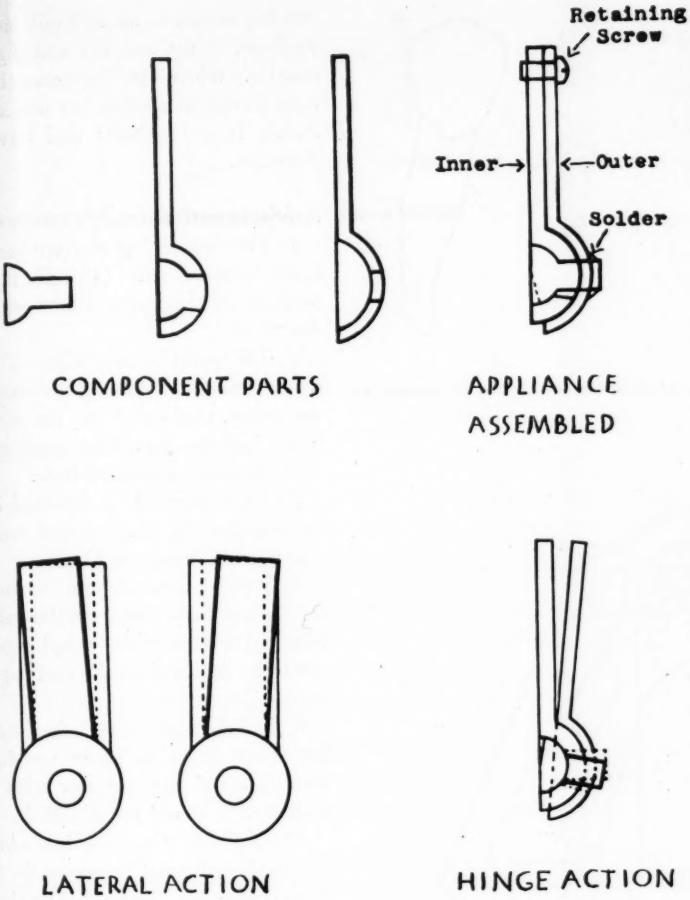
Figure Three—1. Line A which represents a line drawn parallel to the sagittal plane will be the guide.

2. Lines B and C are parallel to Line A.

3. Lines D and E are at right angles to Lines A, B, and C.

4. The teeth involved in the replacement are the only ones that need be considered in this survey which must be carefully followed throughout but is not as exacting as precision attachment alinement. A small straight edge and a good eye for parallelism is all that is required.

Procedure—1. For these replace-



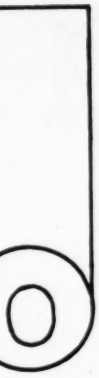
1. *A ball and socket joint.*

ments (clasp or precision) a double palatal bar is necessary. After alining and soldering precision attachments, solder a small plate of 26-gauge clasp metal to the male portion of the attachment on the saddle extension side to allow for soldering the first bar to it. This step is not necessary where clasps are employed.

2. Wax and cast the part of the replacement that is not stress-broken: 1. Right first bicuspid. 2. Right second molar. 3. The left cuspid. 4. The palatal bar connecting these units.

3. The placement of the first bar should be just posterior to the rugae where the vault approaches a horizontal plane and need not be of heavy construction.

4. In waxing the area for the reciprocal joint (Fig. 3) allowance should be made for its reception in order to cut down bulkiness.

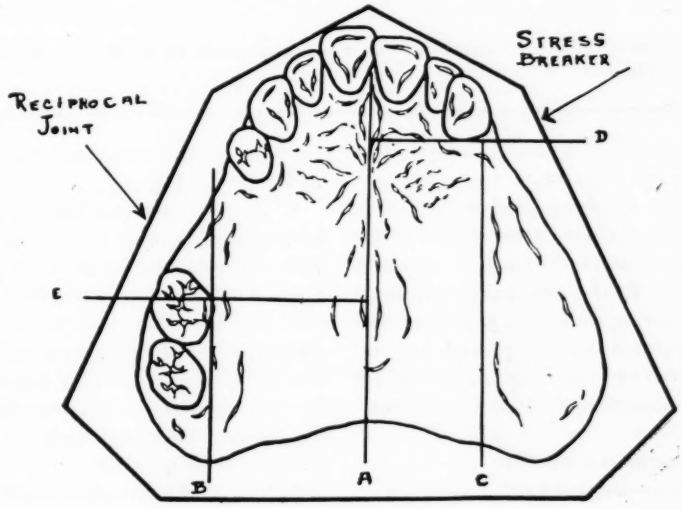


2. *To allow the hinge action to take place, the centering hole in the inner cup is enlarged lengthwise to an elliptical form.*

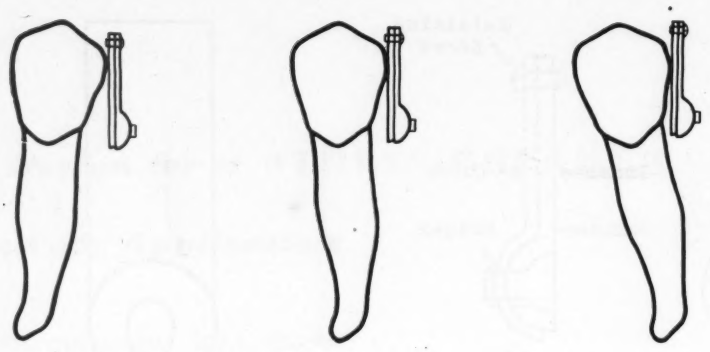
(This reciprocal joint is the appliance shown in Figure 1, using the lateral movement.)

Placement of the Stress-breaker—The survey outlined previously for the placement of the stress-breaker is now carried out: 1. If the teeth involved in the replacement are in normal relation in the axial plane the stress-breaker should be placed (a) at a right angle to the horizontal plane, and (b) as near to the crest of the ridge as possible.

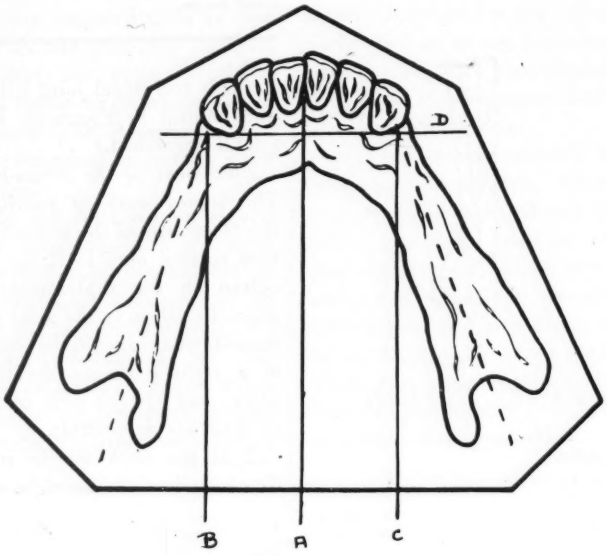
2. If the teeth are in mesial or distal inclination the right angle re-



3. *An upper lateral replacement is used as an example.*



4. *A way to obtain the right angle requirement if the teeth are in mesial or distal inclination.*



5. *A lower bilateral replacement used as an example to emphasize additional considerations.*

quirement is obtained in the manner shown in Figure 4.

size of the stress-breaker in relation

Figure Four—A good idea of the to the size of the tooth is shown in Figure 4. The mechanical advantage of placing this attachment as low down on the tooth as possible is significant. Leverage is nullified, provided the other principles are carried out.

Alinement of the Stress-breaker

1. *Right Angle Requirement*—Having achieved the important right angle requirement the next step in the unilateral case is the alinement of the stress-breakers so that they can function as an individual unit with no binding or freezing.

2. *Hinge Action*—The stress-broken portion must work in unison with the reciprocal joint on the portion not stress-broken.

3. *Unison*—This can be accomplished only if the reciprocal joint is at *right angles to the hinge action on the stress-breaking side.* The necessity for parallel lines and right angles should now be apparent.

4. *Design*—Later, when soldering has been finished, the design for the stress-broken portion must be outlined on a duplicated model or drawn directly.

5. *Functional Movement*—The second bar should be about 3 millimeters posterior to the first bar and slightly heavier. When the appliance functions in the mouth this bar will move mostly in a backward and forward direction.

Additional Considerations

1. The survey performed on a lower bilateral case (Fig. 5) is the same as on the upper unilateral just described.

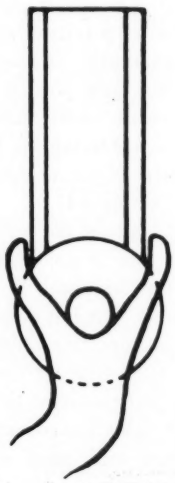
2. The point to remember is that the old rule of following the crest of the ridge (indicated by the dotted lines) will not permit the application of the principles outlined here.

3. When that rule is followed it is obvious that the hinge action can do nothing but freeze or bind.

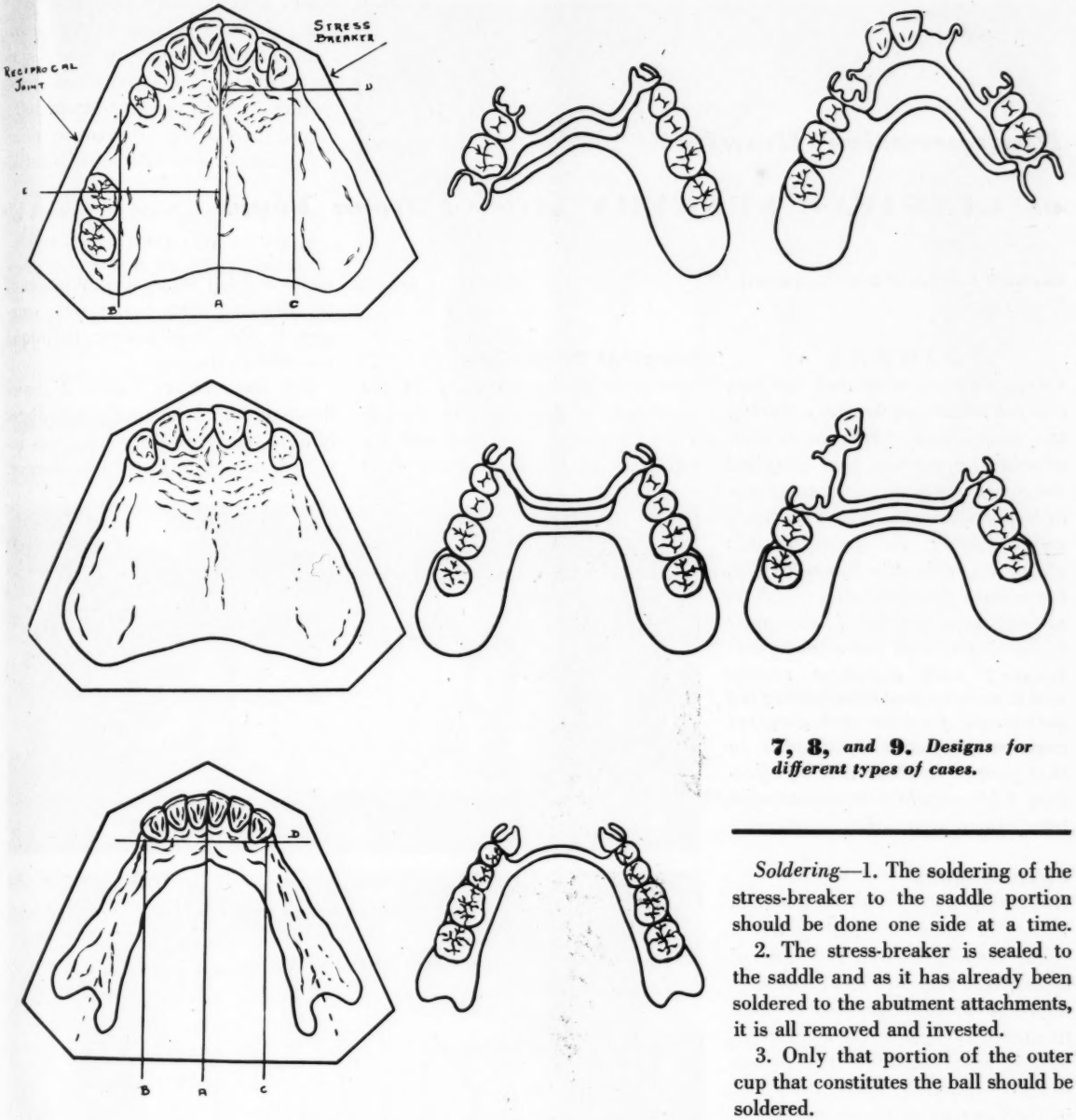
4. Double bars are not necessary on lingual bars, either unilateral or bilateral, except when anterior teeth are to be replaced on the same appliance.

5. In this replacement the lingual bar itself moves in an up-and-down direction and any anterior teeth attached to it would move with it.

Lingual Bar Cases—When clasps are used on lingual bar cases the following steps are taken: 1. The clasps are cast separately. 2. They are then replaced on the master model. 3. The survey for the stress-breaker is car-



6. *Some movement is necessary to eliminate lateral stress. This may be accomplished by extending two fingers of metal to a point just above the outer cup and even with the inner shank.*



7, 8, ***and*** **9.** ***Designs for different types of cases.***

ried out as described. 4. The stress-breakers are soldered to the clasps. 5. The lingual bar and the saddle areas are waxed up and cast in one piece. 6. The soldering of the outer plate of the stress-breaker to the saddle portion is then completed.

Precision Cases—1. In these cases the inner plate of the stress-breaker is soldered directly to the back portion of the male attachment. 2. The outer plate soldering to the saddle portion is the same as for clasp cases.

Assembly Technique

1. After the attachments (precision or clasps) are alined, seal the stress-breakers in place according to the outline.

2. The soldering of the inner cup assembly to the precision or clasp attachment should encompass the entire surface down to the cup and ball assembly (the shank portion.)

3. A duplicate model is now made of this entire assembly, the bar and saddle portion waxed up and cast.

Soldering—1. The soldering of the stress-breaker to the saddle portion should be done one side at a time.

2. The stress-breaker is sealed to the saddle and as it has already been soldered to the abutment attachments, it is all removed and invested.

3. Only that portion of the outer cup that constitutes the ball should be soldered.

4. The remaining shank of the outer ball assembly should be free of solder.

5. This soldering can be done from below or behind.

Unilateral Cases—1. In these cases when soldering the inner cup assembly to the nonstress-breaking portion, it also must be soldered down to the ball and cup assembly.

2. After soldering the movable palatal bar to the outer cup, the retaining screw is removed and the excess length of the shank is cut off as it has no further use.

(*Continued on page* 311)

Postoperative Results of GINGIVAL SURGERY *After Fifteen Years*

EDWARD L. BALL, D.D.S., Cincinnati

DIGEST

Clinical observation and the successful results of surgery during the past twenty years have convinced the author that gingival surgery is indicated in many cases of hyperplasia. He has performed gingivectomy in hypertrophic gingivitis, dilantin hypertrophy, hereditary fibromatosis, and hormonal hypertrophy (pregnancy hypertrophy and pubertal hypertrophy) with excellent results and is positive that eliminating the pathologic pockets and gingival crevices prepares the mouth so that proper hygiene will be effective. This article is a report of a case fifteen years after surgery.

Case Report

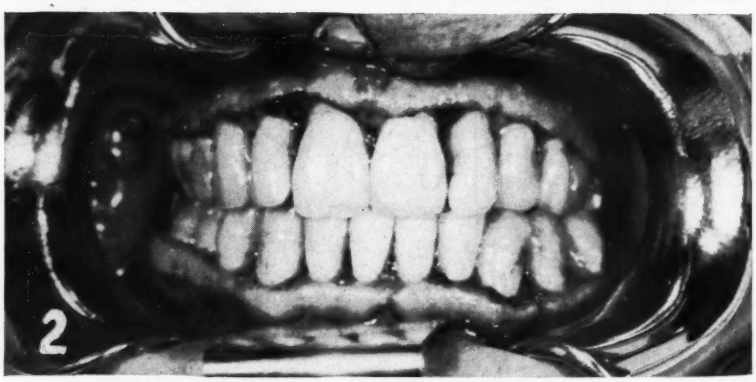
In 1934 the report of a case was published[1] in which the patient was a young man of 29 who had suffered several recurrent attacks of Vincent's infection which responded to local treatment. Because of the recurrences of this acute condition the patient welcomed surgical intervention and in 1933 as soon as the severe inflammation subsided (Fig. 1) gingivectomy was performed.

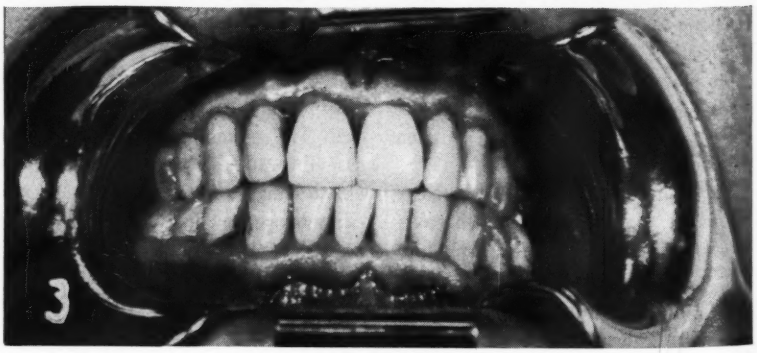
[1]Ball, Edward L.: Acute and Chronic Vincent's Infection. DENTAL DIGEST **40**:232 (July) 1934.

Surgical Technique

After a thorough survey of the symptoms a diagnosis of chronic Vincent's infection was made and (1) extraction of the right lower third molar and (2) surgical elimination of the diseased gum tissue were suggested. The Ward-Kaiser technique was used in surgery.

Ten Days Later—Figure 2 shows the condition of the mouth immediately after the surgical dressing was removed, ten days after debridement.





1. ***1933, before gingivectomy. Photograph taken after acute symptoms had subsided.***

2. ***1933, ten days after gingivectomy. Photograph taken immediately after surgical dressing was removed which was ten days after debridement. Note depth of pockets around the upper lateral incisors.***

3. ***1933, three months after gingivectomy.***

Three Months After Surgery—The patient had been instructed in the proper use of toothbrushes, toothpicks, dental tape, and mouthwashes at the time of surgery. Figure 3 shows the improvement which had taken place three months after surgery.

No Further Recurrence

After fifteen years (Fig. 4) the patient's mouth is in excellent condition and has been so since surgery. There has been (1) no recurrence of Vincent's infection, (2) no bleeding, and (3) no loss of teeth.

Conclusion

1. Innumerable observations of the results offer proof that gingival surgery is indicated in many cases of hyperplasia.

2. Eliminating the pathologic pockets and gingival crevices prepares the mouth so that prescribed mouth hygiene can and will be effective.

814 *Doctors Building.*

4. ***1948, fifteen years after gingivectomy.***

A Design For a Stress-Breaker and Its Application

(*Continued from page* 309)

3. Before soldering any portion of the stress-breaker it should be freely antifluxed all over. Antiflux should be mixed with turpentine to a consistency of a medium thin paint. The antiflux is baked on by applying low heat in a Bunsen flame.

4. Clean off the antiflux with a rubber disc where solder is to be applied.

5. The only time the retaining screw is removed is during the antifluxing; it should be replaced immediately and only discarded after the case is completely assembled and the excess shank portion removed.

Lateral Movement Control

1. Where deemed necessary these attachments can be tailored to the individual requirements.

2. The only action that need be controlled is the lateral movement.

3. Some movement is necessary to eliminate lateral stress. Extending two fingers of metal to a distance just above the outer cup and even with the inner shank will accomplish this result (Fig. 6).

Summary

1. When the case is properly constructed the tissue-borne structure is just as stable as a rigid constructions and moves only under stress.

2. The use of stress-breakers in clasp cases requires the placement of inlays in the abutment teeth. Definite occlusal rests with the base of the rest flat and at right angles to the long axis of the tooth is a necessity.

3. In any type of replacement a balanced functional occlusion is a prime requisite. Stress-breakers come under this requirement.

4. A design for a stress-breaker is submitted with a biomechanical foundation.

5. An original plan of application and assembly is outlined.

55 *East Washington Street.*

PLACEMENT *of* PONTIC BARS

for Acrylic Bridge Construction

JACK F. CATHCART, D.D.S., Berkeley, California

DIGEST

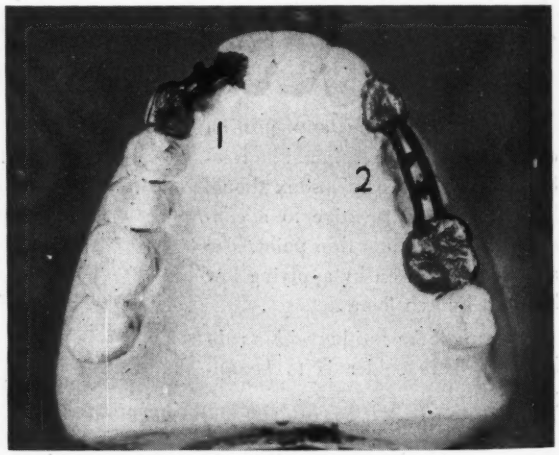
By a process of trial and error and by long observation and close study of the reasons for failures in acrylic bridge construction, the author of this article became convinced that the use of the acrylic itself was not the primary cause of failure, but rather improper handling of the material and poor placement of the pontic bars. In this article a procedure to follow in order to secure success in the use of acrylic in fixed bridge construction is described.

A Valuable Dental Material

Acrylic is fast replacing porcelain in the field of dentistry for three reasons:

1. Esthetic properties.
2. Adaptability.
3. Tissue tolerance.

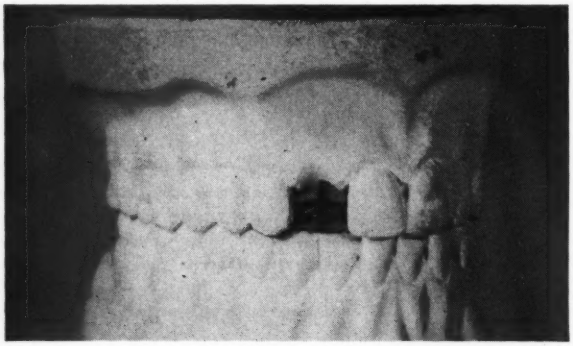
But like all new materials, acrylic must be applied correctly and its limitations must be recognized if the results obtained from its use are to be consistently successful.

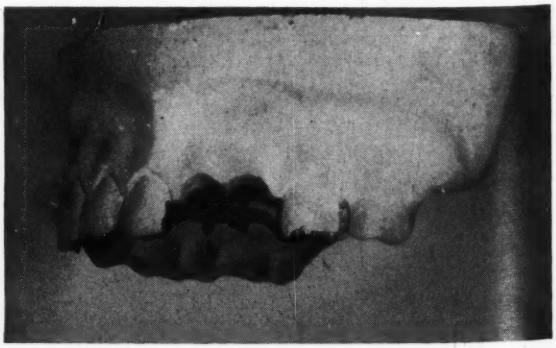


1. *Right: 1. Replacement of the upper right lateral. Three-quarter cast crown on cuspid as abutment. Inlay in central incisor with lug slot to receive the loose end of the pontic bars. 2. Replacement of upper first and second bicuspids. Three-quarter cast crown on cuspid. Three-quarter cast crown on first molar. Two pontic bars with a vertical bar in the center of each pontic.*

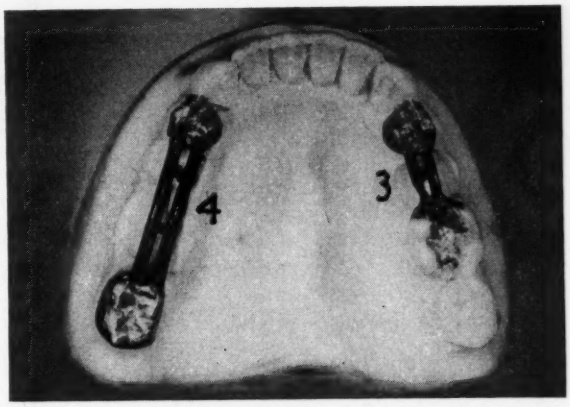
1A. *Below left: Anterior view of pontic bars for replacement of a lateral showing position of vertical center bar in lateral pontic.*

2A. *Below right: Buccal view of pontic bars for replacement of first and second bicuspids showing position of vertical pontic bars in center of bicuspid pontics.*



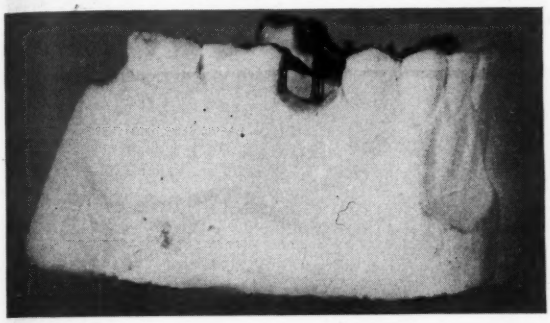


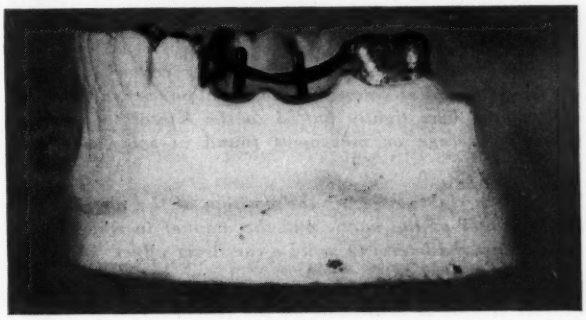
3. *Right: 3. Replacement of lower second bicuspid. Three-quarter crown on first bicuspid. Inlay in lower first molar with lug opening cut in inlay to receive loose end lug of pontic bars. 4. Replacement of lower second bicuspid and first molar. Three-quarter crown on first bicuspid, full crown on second molar. Double pontic bars with vertical bars at center of each pontic position.*

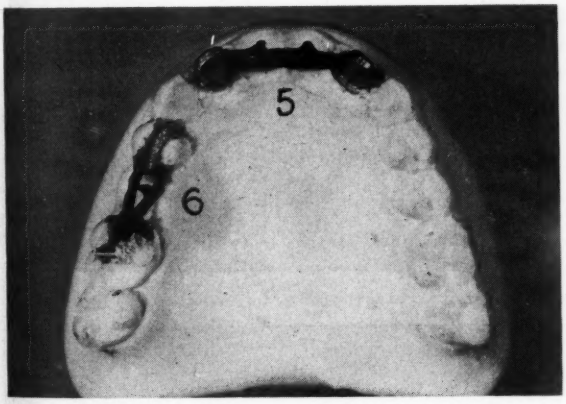


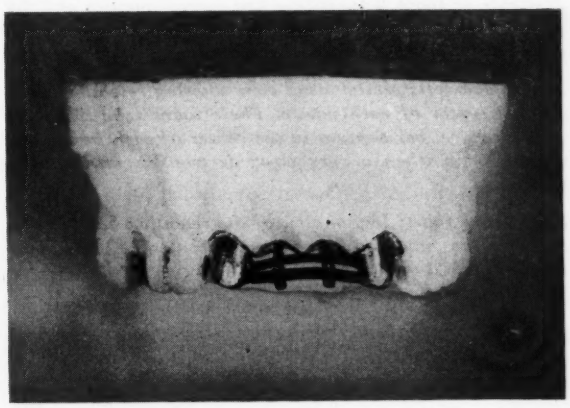
3A. *Below left: Buccal view of lower second bicuspid pontic bars showing vertical pontic bar position.*

4. *Below right: Buccal view of pontic bars for replacement of lower second bicuspid and first molar showing vertical pontic bar positions in center of each pontic.*





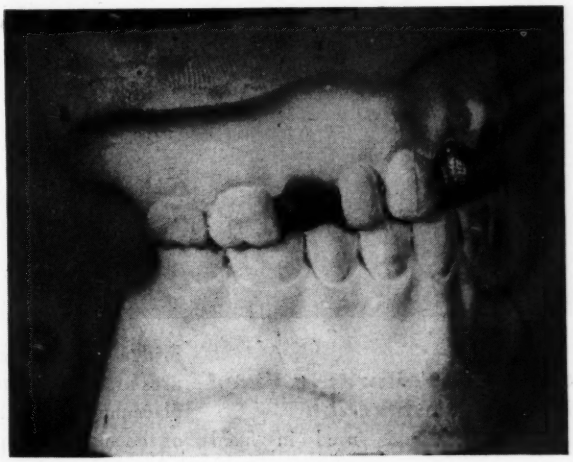


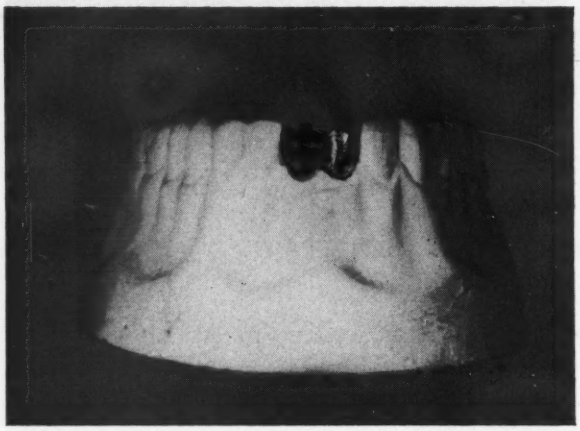


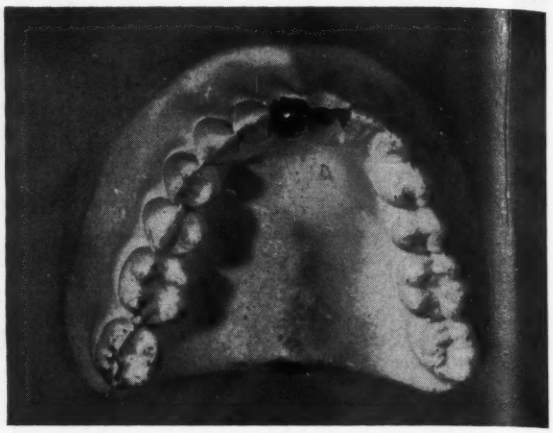
5. *Above left: 5. Replacement of upper central incisors by an all-acrylic bridge. Full crowns on the laterals as abutments. 6. Replacement of the upper second bicuspid. MOD inlay as abutment on first bicuspid and a Class II inlay with a loose end slot cut in the first molar inlay to receive the pontic lug of the second bicuspid.*

5A. *Above right: Labial view of the position of the pontic bars for the replacement of the central incisors showing the position of the vertical bars in the center of each central pontic.*

6. *Right: Buccal view of the pontic bars of the second bicuspid replacement with its vertical supporting bar.*







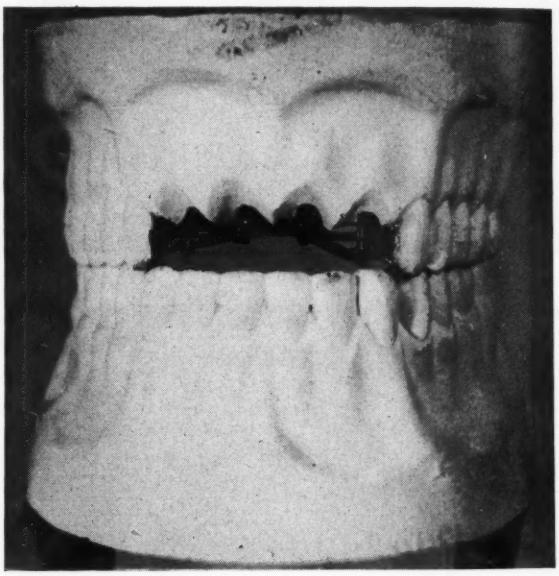
7. *Above left: Replacement of a lower central. An all-acrylic bridge. Full crown preparation on central incisor with pontic bars tightly butted to the lateral to prevent possible leverage or movement found in some two-unit bridges.*

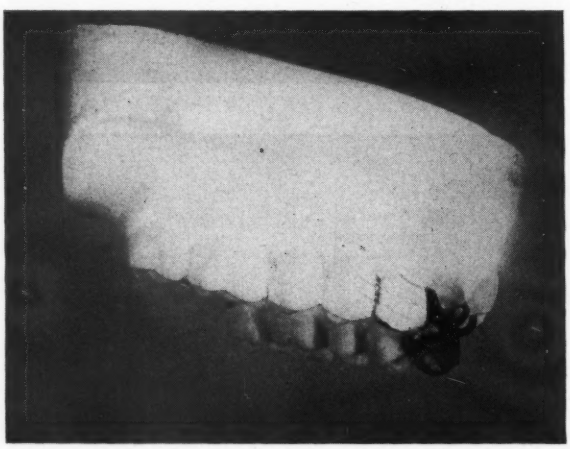
7A. *Above right: Showing the position of the pontic bars in the center of the pontic and the manner in which they rest against the lateral to avoid a cantilever effect*

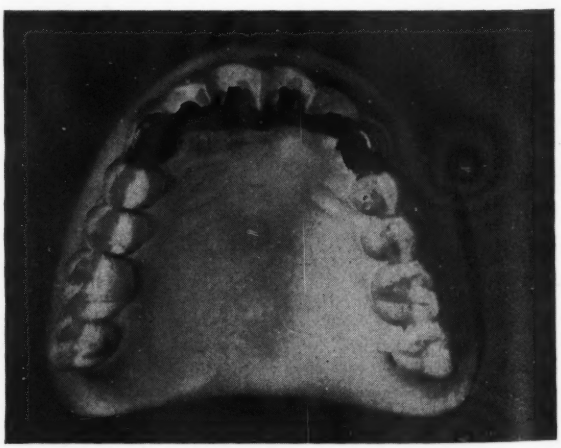
8. *Right: Replacement of the upper four anteriors. Three-quarter crowns as abutments on the cuspids. This positioning of the pontic bars is for the type of bridge where it is desirable to space between the two central pontics and not show any gold. Instead of horizontal bars in the center of each pontic a loop is made for retention.*

8A. *Below left: Mesial-distal view showing retention loops for the center of each pontic. These loops take the place of the vertical bar support in the center of each pontic and are of value when a very clear or translucent incisal is desired.*

8B. *Below right: Incisal view of the retention bar position showing the retention loops in the center of the pontic position, labial and lingual.*







Causes of Failures in Fixed Bridge Construction

When acrylic is used in fixed bridge construction most of the failures are due directly to (1) improper placement, or (2) improper design of the supporting pontic bars.

Pontic Bars—Because of its resiliency, acrylic has the same advantage in dentistry that a rubber tire has over a steel rim on an automobile.

The resilience of acrylic requires that correct internal support be supplied in the form of pontic bars. These bars must be placed in such a position that (1) they not only hold the acrylic in place and (2) properly support the acrylic, but also (3) do not mar the effect of acrylic's esthetic value, its translucency.

Retention Bar Necessary—To avoid failure because of improper placement of the supporting bars, (1) there should be at least two pontic bars, and (2) a lateral bar or some form of retention should be provided for each pontic.

Placement of the Pontic Bars—So that a mass of at least 1 millimeter of acrylic is present around the pontic bars in each direction, the retention bars should be placed in the center of the bridge pontics.

Conclusion

By the proper use of pontics and retention bars (1) sufficient strength will be supplied the acrylic and (2) any possible weakness of the material due to its inherent resilience will be overcome.

701 *American Trust Building.*

Anesthesia For the Child Patient

WILLARD T. HUNNICUT, D.D.S., Atlanta, Georgia

The Problem of Treating Children's Teeth

Many times the confidence inspired by a carefully planned psychological approach to the child patient is destroyed by the unsuccessful control of the physical pain incident to extraction, pulp removal, or cavity preparation.

Sedative Advised

Inexperienced dentists, or those not certain of their ability to control a patient should not hesitate to administer a sedative. One of the short acting barbiturates, pentobarbital sodium (nembutal) has been used successfully.

Dosage—The amount of sedative given is regulated according to the weight of the child; if the child weighs as much as 60 pounds, ¾ grain may be given. Sedation will be found more effective if the child is given ¾ to 1½ grains of pentobarbital the night before his appointment and ¾ to 1½ grains immediately preceding his appointment.

Method of Application—The dentist, his assistant, or a parent may open the capsule and mix the pentobarbital sodium in a teaspoon of simple syrup or jelly. The reaction time of the patient is greatly lessened by this method of administration.

Purposes of Sedation

Sedation should be used:

1. To reduce physical resistance.
2. To reduce psychic shock.
3. To counteract the effect of the vasoconstrictor used in the local anesthetic.
4. To increase the effectiveness of procaine.
5. To minimize procaine toxicity. (Procaine is toxic in about one in one hundred cases.)
6. When photographic records are desired or x-rays are necessary sedation is useful on account of its quieting effect which allows time for focusing and exposure without movement of the patient.
7. For extreme misbehavior or in mental deficiency.

Technique for Application

The technique favored in the use of a local is "the direct thrust" on mandibular block injections, as the "1-2-3," or Fisher method, is apt to cause pain.

2. Any accepted technique may be used without hesitation on the mandible.

3. Anesthetic solution will not have an unfavorable effect if not more than 2 cubic centimeters of a solution containing a vasoconstrictor in the amount of 1:50,000, 1:60,000, or 1:75,000 is used. This amount may be relied upon to produce anesthesia for any operative procedure or extraction.

4. If a barbiturate is used as sedation the amount of anesthetic may be increased.

5. Painting the site or point of entry of the needle with an antiseptic has been discarded because to be effective the topical anesthetic must be rubbed on from thirty seconds to one minute and when the anesthetic is tasted the patient becomes unmanageable.

6. Infection attributable to needle puncture has never been seen by the author.

7. All palatal injections may be dispensed with when doing operative procedures on the maxilla.

8. Infiltrating on the lower jaw is useless; it is certain to fail to produce profound anesthesia.

9. Twenty-five-gauge, 1⅝ needles are recommended for all injections.

Deep Anesthesia

1. Ethyl chloride is preferred for patients who need general anesthesia or deep analgesia for the removal of one or more primary teeth.

2. Doubt concerning the safety of ethyl chloride is answered by the fact that over a period of years 215,000 administrations of ethyl chloride were made at Forsyth Dental Infirmary without a fatality.

3. For short operations where the time required for completion is from one to three minutes, there is no better analgesic.

4. It is used as a deep analgesia, the primary stage of general anesthesia. When administered correctly the secondary or excitement stage is never reached.

Procedure

Position of Patient—Tilt the chair

(*Continued on page* 330)

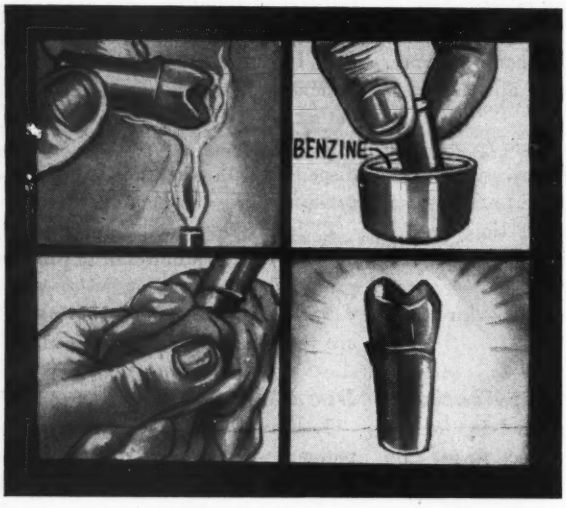
Clinical and Laborator

1

Protecting VISUAL EDUCATION IN DENTISTRY Charts

David C. Pray, D.D.S., East Jordon, Michigan

1. Secure a loose-leaf notebook with plastic binders. Remove the charts from the book and insert them between the plastic binders. These binders keep the charts clean and new material may be added when available.

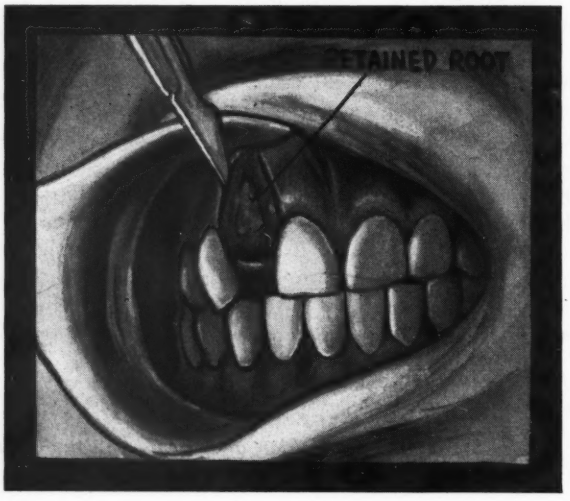


2

Removal of a Stone Die from a Compound Impression

William Granirer, D.D.S., Far Rockaway, N.Y.

2. In removing a stone or diolete die from an impression some residual compound frequently sticks to the die. Carelessness in removal may result in a chipped margin or a broken die. To prevent this, warm the compound over a low flame or in warm water and remove the band and compound. Soak the die in benzine or turpentine for five minutes. The excess compound may then be gently washed or wiped from the die.



3

Double Flap Incisions

Irwin G. Tomack, D.D.S., New York

3. In oral surgical procedures the advantages of a double flap over a single flap are: 1. Better visibility and less danger of lacerating the soft tissue of the flap. 2. Retraction is simplified. 3. The base of the flap is wide which insures better circulation. 4. A minimum amount of bone is removed which provides a better residual ridge. 5. The flap rests on solid bone when sutured in position.

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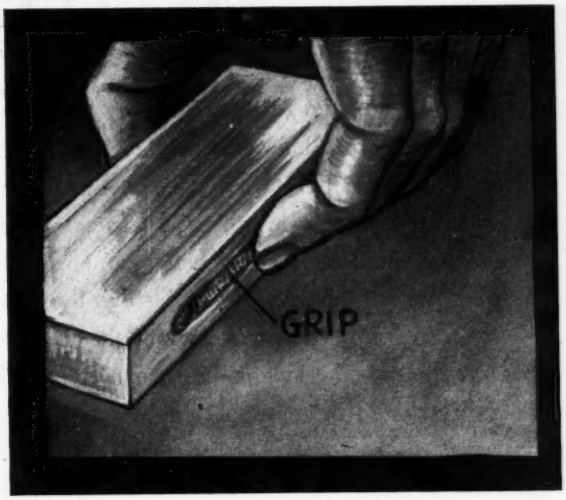
SUGGESTIONS . . .

Slip-proofing a Glass Cement Slab

Joseph Goulart, D.M.D., New Bedford, Mass.

4. Often a thick glass cement slab slips out of the hand when the slab and the fingers are dry. By making grooves on the sides of the slab, finger grips are created that prevent slipping. These grooves are made by using a wheel stone on the laboratory lathe.

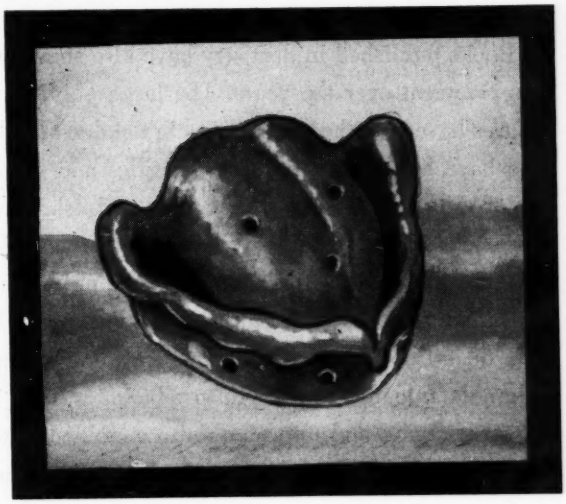


4

Preventing Labial Displacement of a Denture When Relining

J. W. Stedman, D.D.S., Lockhart, Texas

5. Using a large round bur, drill holes in the labial flanges and in the palate of the denture to be relined. The holes permit the escape of excess impression material and prevent the labial displacement of the denture.



5

Ethyl Chloride as a Topical Anesthetic

James J. Salem, D.D.S., Brooklyn, N.Y.

6. When using ethyl chloride as a topical aneshetic for incising intra-oral abscesses, the sudden contact of the drug upon the tissue may give the patient a sharp stinging pain. This unpleasant sensation can be prevented by applying a thin layer of vaseline over the area to be anesthetized before spraying the area with ethyl chloride. This has no effect upon the degree of anesthesia produced.

6

suitable illustrations; write a brief description of the technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time.

Turn to page 330 for a convenient form to use.

Send your ideas to: Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

The EDITOR'S Page

THE QUALITY OF the literature in any profession indicates the level of development of that profession. The periodic literature in the dental profession has improved notably over the past twenty years. The society publications are better supported by the treasuries of the dental societies and the treasuries are in better condition because the membership dues now paid by dentists are more nearly what they should be to support the increasing activities of the societies. The independent publications are no longer owned and subsidized by dental manufacturers but must stand on their own merits and support themselves from advertising and subscription revenue.

Books published in dentistry have also shown an improvement over the years. The large publishing houses have seen the possibilities in the dental field and have been bringing out more titles and doing better jobs on the ones that they publish. The paper stock, the typography, the illustrations, the manufacturing are of good quality. The publishers are to be commended because at the best the sale of a dental book is limited. After spending a considerable amount of money in producing a book it is discouraging and unprofitable to a publisher to have a small sale of a thousand or two thousand copies.

Among the recent titles that should be in the library of every dentist are *Handbook of Dental Practice*, edited by Grossman (Lippincott); *Oral Surgery*, by Thoma (2 vols., Mosby); *Restorative Dentistry*, by Schweitzer (Mosby); *Oral Diagnosis and Treatment*, by Miller (Blakiston). These books represent the best in the publishing art.

The production cost of a book is a small part of the total cost. The author has poured hundreds of hours into the collection of his material and the preparation of his manuscript. It is for most of them an unprofitable enterprise and distinctly a labor to fulfill a desire of accomplishment. Unlike books of general circulation, the royalties on dental books will seldom repay the author for his work in preparing the material. Anyone who writes a book on a dental subject must be motivated by a desire to make a contribution to knowledge. Certainly the profit motive is negligible. The creation of a book is a method of perpetuating a personality and its influence through space and time. A published work lasts forever and carries an influence over generations. A book circulates throughout the world and affects the lives of people in all lands. The influence of a book can never be measured. A person may pick up an idea from reading and improve and develop it a hundredfold. There is a kind of chain reaction in reading. An author expresses a thought, a reader picks it up and enlarges the thought. He in turn writes a record of his own which is passed on to others. The process is accumulative and continuous. Without this there would be no scholarship and little progress. There would be no science.

The periodic literature of a profession is as important as book publication. Although the influence of periodicals may not be as widespread, an article in a dental journal may do as much to influence and stimulate a person as knowledge had from a book. There is no difference in the quality of the knowledge had from the two kinds of publications. A magazine does not have the permanence of a book and, therefore, does not have the impact over the years.

There are many highly capable men in the dental profession who have never made a literary contribution because their talents are not in that field. This is the profession's loss. The scholarship of the profession would be greatly improved if we could develop a group of dentists who are articulate and effective writers who would cooperate with the inarticulate in the publication of papers and books. There is an American Association of Medical Writers. It might be well if a similar association were encouraged within the dental profession.

MEDICINE and the Biologic Sciences

Nutrition vs. Natural Resistance to Infectious Disease

Scientists in many fields have sought the answer to the question, "Can the food we eat affect our resistance to infectious disease?" The answer still appears to be, "Sometimes yes and sometimes no."

There is a definite natural resistance to infectious disease. This natural resistance is defined as the fact that a pathogenic microbe be it bacterium, virus, or fungus does not always produce the signs and symptoms of infectious disease when presented to a prospective host even though that presentation may be the very first for that particular host. Such hosts are designated as "naturally resistant."

The basis for this natural resistance seems to be associated with the biologic fact that such natural differences in susceptibility to infectious disease are capable of being classified by the same biologic groupings we designate as species.

Why such a condition exists is not known although it appears to be explained on a purely genetic basis. Bearing this in mind it certainly is true that diet can have little effect on the natural resistance to infectious disease within these boundaries.

Within a species, however, great differences in susceptibility may exist among populations when a microbic species which experience has shown generally to be pathogenic for the given host species, is presented in the identical way to representative examples of the host. Such variation may be due to (1) genetic or (2) environmental causes. Diet can be considered as an environmental factor.

The fact is that even environmental agents, such as diet, must produce their effects in the physiology of the host and this physiology is operating within a genetic framework. In natural populations of hosts this framework is sometimes plastic to the effect of environment. Thus an environmental agent makes its effect evident.

Man is genetically heterogeneous. The pathogen populations he encounters are not pure cultures as a rule but are mixed. Therefore the environment does have a profound effect on the natural resistance of man. Diet is a part of environment. The evidence reported points to the fact that nutrition is of some importance to the natural resistance to infectious disease.

Schneider, Howard A.: The "Yes" and "No" of Nutrition and Natural Resistance to Infectious Disease, Am. J. of Pub. Health **39**:57-60 (*January*) 1949.

Syphilis—Premarital Examination

Thirty-six states have enacted laws which require premarital examinations for syphilis before the issuance of a marriage license. A clinical examination and a laboratory test for syphilis are necessary for the examining physician to certify that the applicant for license does not have syphilis in a stage that is actually or potentially communicable.

The law as a whole is not intended to prevent permanently the marriage of persons with syphilis. It serves only to delay the marriage of those with communicable or potentially communicable syphilis until the disease has been rendered permanently noninfectious.

The premarital examination must answer two questions: (1) Does the candidate for marriage have syphilis? (2) If he or she does have syphilis, is the disease in a stage or form that is or may become communicable? There is no rule of thumb with which to answer these questions.

The answer to the first question will usually be found in standard diagnostic procedures. These include (1) a full history, (2) a careful clinical examination, and (3) confirmed or repeated serologic tests for syphilis. If the results of all the procedures are negative it is safe to assume that the candidate does not have syphilis.

However, a negative blood reaction for syphilis does not by itself rule out the possibility of syphilis. In fact, the blood reaction may be negative in the presence of highly infectious syphilis, as for example, the early stage of the chancre.

Under the requirements of laws in most states and of good practice everywhere, if it is decided that the candidate for marriage has syphilis, it is the obligation of the physician to form an opinion as to whether or not the condition is actually or potentially communicable to the proposed marital partner.

1. Syphilis presenting infectious lesions is, of course, infectious. 2. Early latent syphilis, if untreated, must be considered potentially infectious. 3. Syphilis of at least five years duration is only rarely infectious as far as is known. However, the duration of syphilis in a given patient is often difficult to ascertain and, by itself, is not an infallible criterion of communicability of the disease. Candidates with late syphilis are not likely to transmit the disease to a marital partner.

A candidate for marriage who has a "fixed positive" blood reaction should have a spinal fluid examination. If such a person is shown by history and examination, including spinal fluid tests, to have neurosyphilis, whether or not he should marry is a difficult question. There is a possibility that involvement of

the central nervous system may bring disaster to the marriage.

A state law that requires postponement of marriage of persons with communicable syphilis does not forbid marriage of a person having incapacitating and eventually fatal syphilis if, as is usually true, the disease in such a person is non-infectious.

When the candidates are allowed to marry even in the presence of syphilis they should be warned of the risks involved not only (1) to themselves, (2) to their partners but (3) to their offspring. Many factors enter into the problem such as: 1. Stage of development and duration of disease. 2. Age and sex of the candidate. 3. Amount, kind, and method of treatment. All of these require expert evaluation.

Editorial: Premarital Examination for Syphilis, J.A.M.A. **139**:310-311 (*January* 29) 1949.

Breast Feeding—Psychologic Aspects

The incidence of breast feeding is declining although it is generally agreed by obstetricians and pediatricians that breast milk is the preferred food for infants. There are several reasons for the decline:

1. Perhaps the most important is the ease and success of artificial feeding. 2. Many women have an aversion to breast feeding, associating it with lower animal forms. 3. There is a false impression that breast feeding is confining. 4. Hospital delivery with the premature use of artificial feeding before the breast milk comes in and the early resort to complementary feeding contribute to the failure of maternal nursing. 5. In many hospitals breast feeding is discouraged as it interferes with the routine of the nursery.

Interest has recently shifted to the psychologic aspects of breast feeding. There are some who consider that the emotional value of this procedure represents the principal, if not the sole advantage of maternal nursing. With this in mind they advocate duplicating as nearly as possible in artificial feeding the method of holding the baby, cuddling, etc., as it is done during breast feeding.

The interrelationships which are set up between mother and child during the early days and weeks of life set a pattern which is important for the later development of the child. 1. The mother who nurses her baby establishes at an early date an intimacy with her child which makes further relationship with him easy and natural. 2. Breast feeding provides the mother with a sense of satisfaction and a sense of achievement which is not readily obtained otherwise. In no other way can she so well demonstrate her indispensibility to the child.

The rooming-in system by which the mother is permitted to have the baby in her room loses much of its value if breast feeding is not established as the benefit derived from the early nearness of the baby is not continued. These considerations are especially important when the mother has strong interests, business, professional, or social outside the home.

Breast feeding provides emotional satisfactions for the baby which are highly important to him. The newborn infant is endowed with a fairly well-developed set of emotional responses. These responses must be elicited by stimuli applied from without through the senses because the infant lacks cerebral power and experience and is unable to originate emotionally charged situations.

Though all his senses are developed and functioning, (1) vision means little to him; to a large degree, the interpretation of visual stimuli requires experience, (2) the same is true of auditory stimuli, although the sound of a caressing voice seems to be soothing, (3) the other senses, smell, taste, skin sensations, and muscle balance require no experience and appear to be highly meaningful to the young baby.

The infant is readily quieted by warmth, by patting and stroking, and being allowed to suck. These sensations are provided automatically while feeding at the breast. They are vital to the welfare of the baby.

Infants receiving breast milk more readily regulate their intake than do those receiving cow's milk. Artificial feeding not carefully regulated can cause intestinal upsets during the early weeks of life.

As a whole, breast feeding is considered an important step in (a) establishing proper interrelationships between mother and child, (b) in providing suitable outlets for the young baby's budding emotional needs, and (c) in supplying a satisfactory experience for the mother.

Caution should be exercised not to stress breast feeding too much to mothers who are unable to feed the baby in this manner. These mothers might feel inadequate or blameworthy with resultant ill effects to both mothers and infants.

Stone, Samuel and Bakwin, Harry: Breast Feeding, J. Pediat. **35**:660-665 (*November*) 1948.

Urinalysis

The routine for urinalysis should include, (1) a macroscopic and (2) a microscopic examination. A morning specimen is customarily accepted as a satisfactory specimen. To be entirely representative, a specimen collected over a twenty-four hour period is best.

From three to eight ounces of urine is required for a specimen. With female patients, a catheterized specimen is more reliable and therefore preferrable. Otherwise, the urine may be contaminated with albumin, pus, or blood from vaginal and menstrual discharges.

Urine should be analyzed as soon as possible after a specimen is taken. If allowed to stand, bacterial action produces changes that impair the value of the analysis. These changes are retarded if urine is refrigerated. Frequently, when the specimen cannot be analyzed immediately, a preservative such as boric acid is used.

The amount of urine secreted daily varies from 1200 to 1800 cubic centimeters. Large quantities indicate a large intake of fluids or the presence of diabetes.

Normal urine varies from pale yellow to dark amber, the intensity

of its color depending on the degree of concentration. Acid urines are usually darker than alkaline urines. Fresh urine is normally transparent. Transparency is recorded as clear, cloudy, turbid, or cloudy with sediment. Cloudiness indicates the presence of albumin, phosphates, pus, or bacteria. Urine allowed to stand becomes more or less cloudy because of bacterial and alkaline salt formations.

The reaction of urine is usually acid. The diet may change it from acid to alkaline and back again during a single day. After eating, when acid is being used to digest food, the body fluids become alkaline.

The specific gravity indicates to what extent the kidneys are carrying out one of their normal functions. Variations in specific gravity show healthy kidneys, for healthy kidneys are adaptive and responsive to the demands made upon them. When kidneys are diseased they are less able to vary their activities and lose some of their adaptive power. The urine then remains of almost uniform concentration and lessened variations in the specific gravity may be observed. The specific gravitiy of normal urine is from 1.015 to 1.025. In diseased conditions this may vary from 1.001 to 1.061.

A trace of albumin is frequently seen in normal urine. This may or may not be significant. Sometimes the condition is transitory; the albumin shows up during a fever and disappears when the fever subsides. Albumin is most significant as a diagnostic factor in kidney disease. The amount of albumin is determined by the cloudiness noted after filtration, centrifuging, and addition of acid to the urine.

Thoroughly boiling a small amount of urine and then adding nitric acid will indicate the presence of albumin. Normal urine remains or becomes clear. A cloudiness which clears up when the acid is added usually indicates the presence of phosphates in the urine.

Albumin is present if. after shaking urine. a good deal of foam forms and remains a long time. Albumin is reported as (1) Plus 1. 2. 3, or 4, (2) as a trace, (3) a small amount, (4) a moderate amount, or (5) a large amount.

At times various sugars are found in the urine. Dextrose is the most common and the only one of real significance. Its presence is the most characteristic sign of diabetes. In advanced or untreated cases, the volume of urine is great, its color pale, and the specific gravity high.

There are many tests for the presence of sugar in urine, most of them quite complicated. In one, copper sulphate is dissolved in distilled water and heated. This is then added slowly to a solution of citrates and carbonates. The mixture is filtered, combined with a small amount of urine and boiled thoroughly for several minutes. When cool, if sugar is present, a green, yellow, or red precipitate is formed, the color depending upon the amount of sugar.

Ketone bodies, consisting of acetone and diacetic acid, are probably present in small amounts in urine. They increase in fevers, in certain nervous disorders, and gastrointestinal disturbances. Indican in urine indicates a putrefactive process going on somewhere in the body and it is associated with lassitude and headache. It is often a result of too much meat in the diet.

Urine sediment is examined under the microscope. The "organized sediments" include various kinds of casts, cells, crystals, pus corpuscles, red blood corpuscles, bacteria, and animal parasites. When one or more of these substances are found the technician looks further and records his findings so that the practitioner can use them to find and diagnose conditions in his patients.

Todd, James Campbell and Sanford, Arthur Hawley: Clinical Diagnosis by Laboratory Methods, ed. 10, *Philadelphia, W. B. Saunders Company,* 1943 *pages* 63-188.

Hodgkin's Disease

Hodgkin's disease is considered to be a disorder of the entire reticuloendothelial system. However, it affects the lymphatic system primarily. The rate of spread from node to node is variable and progressive with exacerbations and remissions.

The recorded incidence in the United States varies from 0.5 to 2.5 per 100,000 living population. Increased incidence is being reported in the last two decades, possibly because of the increased use of biopsy as a diagnostic procedure. The disease has a world-wide incidence. It can occur at any age but is most frequent in young adults. Males are affected twice as often as females and in childhood the ratio increases to more than 4 to 1. It has been noted that the disease occurs more often in more than one member of a family than can be accounted for by chance alone.

The primary site is difficult to evaluate because the disease is seldom diagnosed until it is moderately advanced or even far advanced. The earliest microscopic change is said to be a proliferation of reticular cells in lymph nodes. The spaces in the nodes are filled with these cells and with lymphocytes. There is then a development of eosinophiles, multinucleated cells, and large mononuclear cells followed by a conversion or degeneration of these cells into fibrous tissue. A reduction occurs of lymphoid tissue of the normal type in involved organs and in uninvolved organs.

Many authorities relate the origin of Hodgkin's disease to recent infections about the head or respiratory tract. In reality, this may be an effect and not a cause. Tuberculosis is fairly often concurrent with the disease. Painless, progressive enlargement of lymph nodes is the chief complaint. Other symptoms are (1) weight loss, (2) anorexia, (3) fever, (4) pruritis, (5) cough, and (6) dyspnea. Remissions and exacerbations in the early stages are quite unpredictable.

Pain is common in the later stages and is often due to bone lesions. The final diagnosis of the disease rests on biopsy.

The prognosis is that of inevitable death but this may occur a few weeks after diagnosis or be delayed many years. Females with the disease are said to live longer than males. The duration of illness is very hard to

establish since the actual onset can usually not be determined even within several months.

Death is due to (1) generalized visceral invasion, (2) secondary infection, or (3) to destruction of the bone marrow. Terminal anemia is common. There is much argument as to whether Hodgkin's disease is (a) a neoplasm, (b) an inflammation, (c) a disease midway between these first two, or (d) a metabolic disturbance. Evidence suggests the first two theories. The fatal termination suggests a neoplasm but the variable clinical course with its remarkable remissions and exacerbations suggests an inflammation.

1. Roentgen radiation is the treatment of choice for localized disease. 2. Radium is not particularly useful with this disease. 3. Other radioactive substances have been disappointing. 4. Surgery is considered useless and often dangerous for the most part. 5. Chemotherapy, with the exception of the use of the nitrogen mustards (which are somewhat effective), has been of little or no avail.

Hoster, Herman A. and Dratman, Mary B.: Hodgkin's Disease 1832-1947, *Cancer Research* **8**:149-153 (*March*) 1948.

The Port-wine Birthmark

The port-wine mark is also termed nevus flammeus or capillary nevus. This type of lesion may be single or multiple and located on any part of the cutaneous surface.

A large percentage of people have this mark on the nucha within the hair line. Much less commonly it occurs elsewhere about the head centering about one eye. As a rule the involvement is unilateral and occurrence on the trunk is exceedingly rare.

Port-wine marks are areas of irregular shape and variable size in which the color of the skin is altered to some shade of red, from light pink to purple. There is no significant change of the skin. The surface is not altered and there is no thickening or variation in consistency.

The mark is usually noted at birth, or shortly thereafter. The smaller and lighter lesions may disappear in the first few years of life. However, if a lesion is still present after this, involution rarely, if ever, takes place.

(1) Extremes of environmental temperature, (2) crying in children, or (3) intense emotion in older persons may temporarily intensify the color. Otherwise the lesions tend to remain unchanged throughout life. The marks are apt to enlarge as the person grows so that they continue to occupy the same relative area of the cutaneous surface.

Histologic examination reveals the presence of an abnormal number of slightly dilated capillaries in the corium. The lesions that clinically are faintly pink show only moderate involvement in the papillary layer. Those that are a brighter color exhibit more vessels at the same level and those with a bluish or purple tinge present involvement at deeper levels in the dermis.

The nevi are frequently sources of intense embarrassment to afflicted persons. Treatment for them must be considered unsatisfactory since it is not possible to remove them completely without destroying the involved area of skin. The resultant scar may be equally unsightly.

Small pale lesions may involute in the first few years of life. In such cases treatment should not be considered until the child is a few years old. In deeper colored lesions some decrease in color may be obtained over a long period of time by trained personnel using carbon dioxide either in solid or slush form. Use of the "Grenz-ray" or repeated blistering exposures to ultraviolet light may be of some benefit. However, even with great care the end result may be considered as improvement only, rather than as eradication, and a mottled effect is often produced.

In the case of a woman with a nevus flammeus on an exposed area, quite satisfactory covering and masking of the lesion can be obtained by experience in the use of cosmetic preparations designed for this purpose.

Webster, James R.: The Identification and Management of the More Common Nevi, M. Clin. North America **33**:219-238 (*January*) 1949.

Home Accidents

1. Of all deaths from accidents among the civilian population of the United States in 1947, 35 per cent were due to injuries sustained in the home. 2. Of all non-fatal accidental injuries nearly one half, 5,200,000, occurred in the home. Home accidents certainly can be considered as a community health problem.

Some 140,000 persons were left with a permanent defect as a result of a home accident. Thus for every death, 150 others were temporarily disabled. This is more than for any other class of accidents. And for every death, four persons suffered a permanent impairment that varied from minor disability to complete crippling.

The death rate for home accidents in 1946 was 24 per 100,000 population. This rate is essentially the same as it was in 1930. It is apparent that the reduction of home accidents has not kept pace with the reduction shown in accidents in general. Neither has the incidence decreased at the rate of improvement in household furnishings and facilities.

The number of fatal accidents among workers is almost twice as great off the job as on the job. Home accidents are responsible for a large number of deaths among children less than one year of age and in adults past 65 years.

Excluding infants under one year of age, the number of boys dying of home accidents under 15 years was twice that for girls although the hours of risk in the home were much the same and certainly no greater for boys. Males continued to have more fatal home accidents during the productive years, from 15 to 64. This occurred despite evident differences between males and females in the num-

---

Gordon, John E.: Home Accidents as a Community Health Problem, Am. J. M. Sc. **217**:325-343 (*March*) 1949.

Announcement

We wish to make it known to the dental profession
that the platinum and porcelain crowns and platinum castings
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Everybody is Ambivalent

Ambivalence is a fancy word for two-wayness, for saying that we love and hate the same object, that we want to go to the party and wish that we might stay at home, for feeling deeply attached to people and finding them extremely annoying at times. Ambivalence is not being two-faced or guilty of duplicity. It is not being abnormal anymore than liking hot and cold food and drinks. Ambivalence is night and day, up and down, north and south.

Sometimes ambivalence troubles our conscience when we feel inwardly annoyed by the remarks or presence of a person who is close to us. We may love a person dearly and still feel at times like wringing his neck. We may be sure that he feels the same toward us. He may sacrifice for us, give of himself, be dependable, just, and generous, but still harbor homicidal instincts toward us. As people acquire their veneer of civilization they are inclined to push the hostility part of their ambivalence into the background. They keep their hates under cover. The child has no such restraint. He is ready to shower you with love one minute and pour forth a stream of hate the next. As he matures he becomes less inclined to express the extreme of either emotion although he is more likely to follow the conventional patterns and show attention, respect, and even affection to his parents.

The ambivalence of the parent is somewhat different from that of the child. He fondles and caresses the child and plies him with gifts. He is also capable of sudden cruelty, a slap on a tender spot, a torrent of words of censure. As a child puts on years the parent's capacity for an unaffected display of affection and of violent temper are both dried up. Watch the self-conscious greeting of a father and his grown son, the peck on the cheek of a mother when she meets her grown daughter. It was these same people who one day had the ambivalence to express deep love and violent irritation. Now conventionality has robbed them of the extremes of emotion and in its stead is the flat plateau of propriety.

We are ambivalent toward our patients and they toward us. In fact, we all swing from boredom toward dental practice to jumping enthusiasm. Some days we dread to go to work and to see and be nice to people. Their dental and their human problems annoy and bore us. The only thing that saves us from pushing a cotton roll down a few throats is the law against assault and battery. On those days when our tolerance quotient is in the depressed brackets we find ourselves unproductive and in-

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efficient. On those days when we bubble with charity and enthusiasm, when our ambivalence is on the pleasant side, we find ourselves productive and efficient.

Can we do anything to change our ambivalence toward people, institutions, activities, and events? Probably not much. Our two-wayness resides in the ups and downs, the tides of the living process. Life is a pulsation—the heart contracting and relaxing, inspiration and expiration, muscles working and resting, bodies sleeping and waking. A certain amount of swing in attitude and mood is normal. When the swing gets too wide and the pulsation is too pronounced, we are headed for trouble. Split personalities, manic-depressive states, violent orgies of loving and hating are signs that our personalities are getting out of bounds and that we need help. The help may come automatically from the God-given powers of self-repair. It may come from inner enlightenment and discipline, or it may come from the counsel, the guidance, the wisdom of another person.

Fortunately the human nervous system has a latitude of selectivity. We may, within a wide range, select the thoughts and the attitudes that we wish. If we wallow in fears, unpleasantness, and hate we can be certain that we will poison ourselves and everybody around us. If we select the pleasant and the good we will enjoy the warmth that is felt within ourselves and by the people around us. This takes work and discipline, and try hard as we may, on occasion we will regress to lower levels of thought and action. That is our ambivalence showing itself.

Well-fed and Malnourished

It seems incongruous that people may be well-fed and still malnourished. "Well-fed" usually suggests that a person is on the side of overweight. Overweight comes in many cases from too many starches, sugar, and fat; too much alcohol and too many sweet, good tasting, rich foods. The lean and hungry look is popularly associated with poverty, but the poverty is from the lack of rich food. The "wealth" from leanness is

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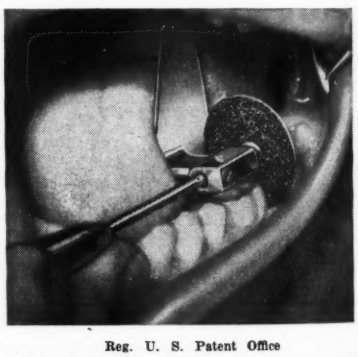

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Dentists have been in the forefront in spreading the truths of nutrition. Weston Price was a dentist. Many of the officers of the American Academy of Applied Nutrition are dentists. The president of the Lee Foundation of Nutritional Research is a dentist. To this list we should add the name of Fred Miller, a dentist of Altoona, Pennsylvania, who is a tireless teacher of nutrition. Recently Fred sent me a reprint of an article written by Royal Lee, D.D.S., that appeared in *The Challenge* magazine. In these words Doctor Lee writes of the national disgrace of malnutrition:

"We have drifted into this deplorable position of national malnutrition quite inadvertently. It is the result of scientific research with the objective of finding the best ways to create foods that are non-perishable, that can be made by mass production methods in central factories, and distributed so cheaply that they can sweep all local competition from the market. Then, after there develops a suspicion that these 'foods' are inadequate to support life, modern advertising science steps in to propagandize the people into believing that there is nothing wrong with them, that they are products of scientific research intended to afford a food that is the last word in nutritive value, and the confused public is totally unable to arrive at any conclusion of fact, and continues to blindly buy the rubbish that is killing them off years ahead of their time.

"If the American people were confronted with a war with a foreign enemy, so powerful in a military sense that it could slaughter two million people a year, it would be a major and primary national problem to lick such an enemy with all possible haste. But malnutrition can kill this number yearly, and modern advertising science, with the volunteered assistance of modern organized medi-

(*Continued on page* 328)

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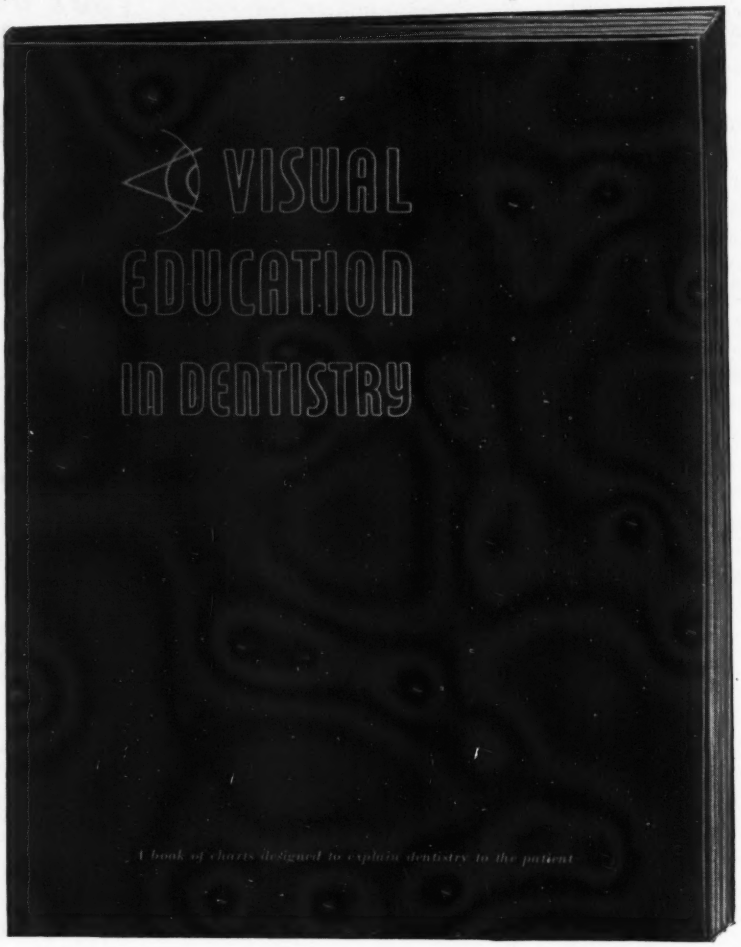

IT'S HERE

ADDED FEATURE: A *new* four-page two-color chart is included in this reprinting. It is entitled "The Dangers of Pyorrhea" and portrays an important story which hasn't been presented in this form before. There are now 31 charts in "Visual Education in Dentistry"; any one of which can be worth more than the price of the complete booklet.

SAME PRICES: Despite the addition of the new four-page chart, and much higher printing and paper costs, the new reprinting will sell at the same price as before—$1.00 to regular subscribers to Dental Digest; $2.00 to non-subscribers unless purchased in combination with a subscription (see coupon).

Yes, the *tenth* reprinting of *"Visual Education in Dentistry"* is ready for you. The total sale of the previous editions is now 90,000; isn't this proof in itself of the value of this series of charts? Any practitioner can use the complete booklet in an ethical manner in his patient-education program. *It portrays vividly the value of periodic dental treatment and the danger of neglect.* The charts were originally designed to explain dentistry to the dental patients—they do just that! No other series has been accepted and used so widely in dental practices.

Here are a few typical comments taken from letters we receive almost daily: "I receive Dental Digest and your 'Visual Education in Dentistry' is a favorite 'show' book of mine"; "I find your 'Visual Education in Dentistry' most valuable. Enclosed find $2.00 for two more copies"; "My copy of 'Visual Education in Dentistry' is well used in the waiting room and also at the chair-side for patient education. The charts are useful in explaining various aspects of dentistry to any patient or group"; "Will you please send me your booklet, 'Visual Education in Dentistry.' The one I have is well worn from use."

Space limitations make further quotations from letters impractical, but we feel that the above few exemplify the high regard of the dental profession for the booklet. It will merit your high regard too once you have had a copy only a few days.

WE REPEAT, the tenth reprinting is a duplicate of the previous booklet with the exception of the one additional four-page two-color chart entitled "The Dangers of Pyorrhea." However, this one chart alone will be of sufficient value to any practitioner who has purchased the previous reprinting, to warrant another investment now. Why not order two copies—one for use at the chair and the other for your reception room? A better investment at small cost could not be made.

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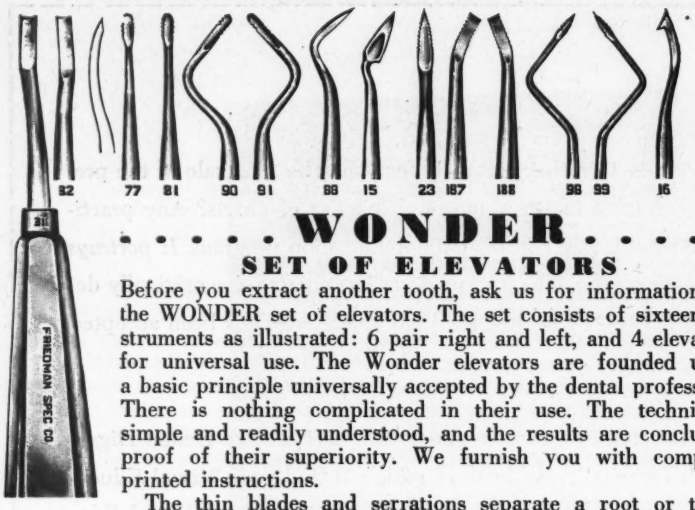

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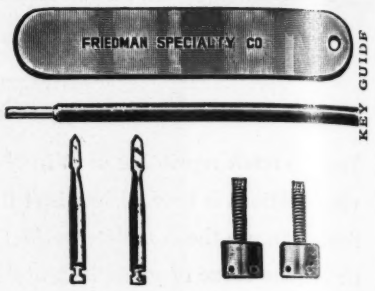

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(*Continued from page* 325)

cine, works hand in hand to keep the people in the dark and keep the dollars flowing into the coffers of the makers of devitalized, "foodless" foods.

"The really serious part of the picture is that those who are charged officially with the job of enforcing the regulations regarding the truthfulness of advertising and labeling are under such political and commercial control that they are actually stopping the advertising of vitamins and mineral foods, and factual statements as to their effects are not permitted to be made in advertising and labeling unless they conform to the 'concensus of medical opinion,' while simultaneously the labeling and advertising of foods that fail to supply nutrition are blatantly setting forth such misstatements as, 'White bread is wholesome,' and that 'Synthetic vitamins are the same as the natural.'

"What are the effects in general of devitalized foods?

"First, is the degenerative changes that end in the sudden or gradual death of the victim, usually put in the category of heart disease, high blood pressure, and probably cancer.

"Second, is the lowered resistance that shortens the life span and permits the continual attacks of disease germs of the various kinds that may be anything from pyorrhea to pneumonia.

"Third, is the fatigability that is characteristic of the deficient person which steals his living hours and makes his life miserable and nonproductive, instead of happy and prosperous.

"Fourth, and last, is the degeneration of sex function of both sexes, that is actually and definitely bringing on what Theodore Roosevelt termed, 'Race Suicide.' We, as a nation, are being unquestionably castrated, little by little, through our use of foods that have been tampered with—let us say, denatured and devitalized. Therefore, we, ourselves, become devitalized. The deficiency of every vitamin has some part to play; there is no special sex vitamin. The female of the species pays the biggest penalty for our ignorance.

"Now, the last question is—how can we avoid these deficiencies?

"We must first select our foods with meticulous care. Eat no refined sugar or white flour, or products containing them. Use honey, brown sugar, and maple syrup only, as sweets. Use fresh ground wheat or other cereals exclusively, as the vitamins in wheat or other grains become oxidized in a few days and freshness is the only guard to wholesomeness. The flavor of whole wheat changes day by day after grinding, like coffee. The finer it is ground, the faster the loss of vitamins. Many people find the answer in a home grinder that can often be obtained at a low cost from department stores.

"Use only real butter—avoid oleo. For cooking, use peanut or corn oil, if possible. Pasteurized milk is relatively useless as a source of the calcium it is so well recommended for, because pasteurization destroys the

enzymes that are necessary for the assimilation of the calcium; so insist on raw certified milk exclusively.

"Citrus fruits are not dependable sources of vitamin C unless fresh. Oranges may be devoid of this vitamin if more than three months old. They are now stored in air-conditioned warehouses for three times that time, in many cases, without obvious alteration in texture. Leafy vegetables can lose all their vitamin C in one week of storage, so your only dependable source of such foods is the roadside farmer or your own garden.

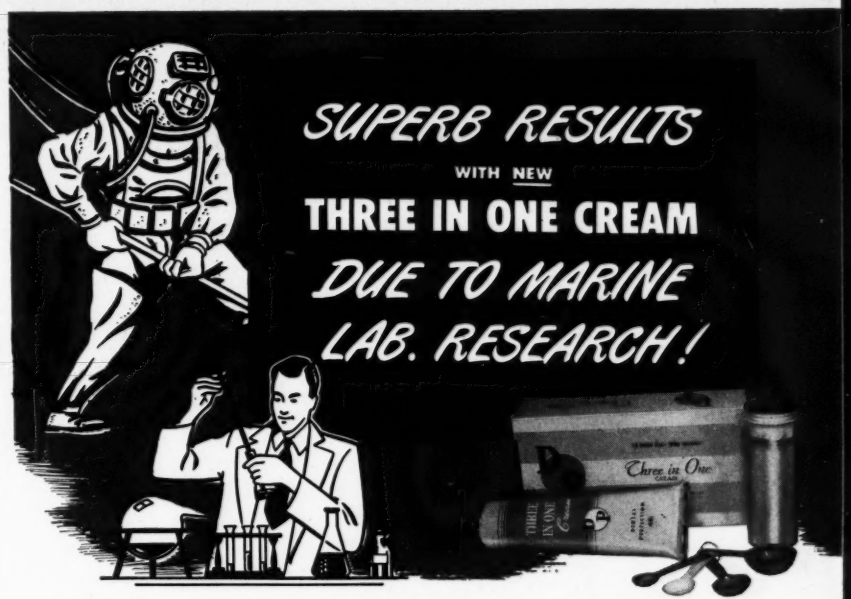
"Meat, today, is carried in cold storage until its vitamin content is only a vestige of its original value, so fresh fowl and fish are the best from a vitamin standpoint.

"If you have children to feed, whole wheat as pancakes, with honey, or whole wheat cereal made by cracking wheat in a home hand grinder should be a basic food for the morning meal. Peanut products, fresh roasted or as peanut butter, are a basic high-protein food that can substitute for meat in these days, in diets for children.

"Potatoes, like wheat, can support human life indefinitely, if eaten boiled, but not mashed. Mashing exposes the vitamin C to air, causing its destruction in ten minutes. Potatoes have about one-third of the vitamin C content of oranges and are a valuable source of that vitamin. Tests in Irish prisons have shown that men fed potatoes alone for ninety days gained weight and were apparently in better condition than when they began. Bananas, too, can be used as a single food, containing everything needed by the human economy.

"So we can list as basic dependable foods—milk, wheat, potatoes, bananas. Each will support human life alone, if not devitalized by tampering in the hands of middlemen. Fresh meat will also stand in this category, too, as proved by Steffansson.

"Children will overeat of carbohydrate foods if given the opportunity to have access to devitalized products. Candy made with refined sugar is not self-limiting to the human appetite like the natural honey. That is why sugar can cause such destruction to health, for it fills the



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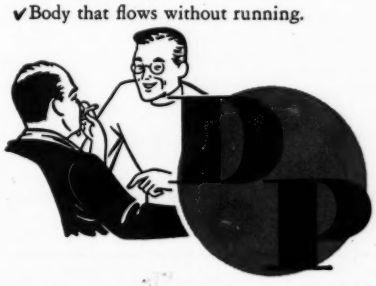

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CLINICAL AND LABORATORY SUGGESTIONS

(*See pages* 316 *and* 317)

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stomach without offering complete nutrition. It is far cheaper in the end to buy the higher priced wholesome foods than to pay the physician and dentist for services after the damage is done."

With all the fury of debate over a national health program it is appalling that nothing or little is ever said by the planners on the relationship of proper food and good health. It might be that the vested interests, the food adulterators and despoilers are so strong that they have even intimidated the bureaucrats and politicians. —E.J.R.

Anesthesia for the Child Patient

(*Continued from page* 315)

back slightly, loosen the garments around the throat, insert the mouth prop in the opposite side of the mouth, and instruct the patient to bite firmly on it.

Induction—1. Place two layers of gauze about 4 x 4 inches over the mouth and gently close the nostrils with the thumb and forefinger of the left hand. 2. Permit the patient to breathe air through the gauze a moment and then *drop* on, not spray, the ethyl chloride, holding the vial several inches away. 3. A piece of matrix material may be placed between the spring cap and the vial. The volatile ethyl chloride may then be dropped on the gauze.

Operating Stage—Signs of analgesia will be noticed after the vapor has been inhaled for about thirty or forty seconds. When (1) the lid reflex is sluggish or absent, (2) the eyes roll or become fixed upward or downward, (3) the arm drops heavily if lifted, and (4) the patient snores slightly, the conjunctival reflex is present. This period lasts three or four minutes, followed by a thirty to sixty second period of analgesia in which the patient is conscious but sensation to pain is lost.

Treatment for Complications

Complications are rare and usually

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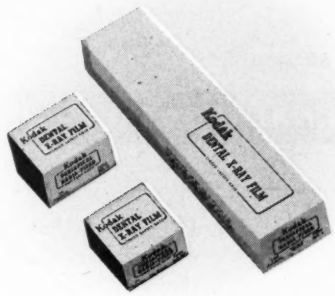

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of minor importance. The best treatment is to allow no complications to arise. Should a complication arise the following measures may be taken:

1. Tilt the head forward to relieve obstruction in larynx from mucus.

2. If the tongue falls back it may be pulled forward with tongue forceps or gauze.

3. For cessation of breathing, press the diaphgram sharply for reflex inspiration.

4. For sudden change of color, the head should be lowered and (1) aromatic spirits of ammonia inhaled, or (2) camphor in oil or caffeine sodium benzoate should be given subcutaneously for more serious reactions.

5. If respiration stops, (1) inject atropine sulphate, strychnine sulphate, or camphor in oil, (2) begin artificial respiration, and (3) if necessary inflate the lungs with oxygen.

Contraindications

Never administer analgesia to a patient with any kind of respiratory obstruction: (1) tuberculosis, (2) bronchitis, (3) anemia, (4) leukemia, or (5) cardiac disease.

In Conclusion

1. The universal anesthetic or technique has not been found.

2. No single agent or method of administration is best for all types of operations.

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DENTAL MEETING DATES

Maritime Dental Convention, regular meeting, St. Andrew's-by-the-Sea, Canada, August 31-September 2.

Florida State Dental Society, regular meeting, Palm Beach, November 10-12.

Georgia State Dental Society, regular meeting, Savannah, November 13-15.

Ohio State Dental Society, regular meeting, Columbus, November 13-16.

Mid-Continent Dental Congress and St. Louis Dental Society, regular meeting, St. Louis, Missouri, November 27-30.

Greater New York Dental Society, regular meeting, New York City, December 5-9.

Kentucky State Dental Society, regular meeting, Louisville, March 29-31, 1950.

Southern California Dental Society, regular meeting, Los Angeles, April 3-5, 1950.

Oklahoma State Dental Society, regular meeting, Tulsa, April 16-19, 1950.

Virginia Dental Society, regular meeting, Roanoke, April 17-19, 1950.

Michigan State Dental Society, regular meeting, Detroit, April 24-26, 1950.